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EDUCATION IN THE HISTORY OF MEDICINE

Report of a Macy Conference
Sponsored by the Josiah Macy, Jr. Foundation
in cooperation with
The National Library of Medicine

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INTRODUCTION AND WELCOME

John Z. Bowers

John B. Blake

Dr. Bowers: About sixteen months ago the Macy Foundation began to look at new programs and ideas. An area that immediately came to our attention which several of us thought was of great importance was the history of medicine. With the encouragement of our board of directors, I visited medical schools, talked to people, and made some diagnoses. One was that there is today a great deal of interest in the history of medicine in the medical schools of the United States. The second was that there is still considerable difference of opinion as to what the history of medicine is, and I think this is healthy. Third, there were few people to whom medical schools could turn for leadership; in the history of medicine there is a very serious manpower problem. Fourth, there is a significant interest in the history of medicine among medical students, which I suspect in part reflects their world-oriented interest today.

After some consultations with people like Dr. Berry, it seemed wise for the Macy Foundation to try to do something with the history of medicine. Just about that time Dr. Martin Cummings called me and asked if the Macy Foundation would like to join the National Library of Medicine in a conference program. That essentially is why we are here tonight.

In the meantime, we have made grants for postdoctoral fellowship and general support to six programs that are active in the field of the history of medicine, Yale, Hopkins, Tulane, the University of Washington, the University of California in San Francisco, and the University of California in Los Angeles. Second, we have announced a national postdoctoral program in the history of medicine and the biological sciences, because it is difficult to see how the two can be separated. Third, this week we made our first development grants to encourage two medical schools, Columbia and Harvard, to initiate programs to

educate and encourage the faculty toward a greater interest in the history of medicine and science.

In planning this conference, we have had a delightful joint relationship with the National Library of Medicine, represented here by Dr. John Blake. I would like to introduce Dr. Blake and have him say a word or two about the role of the Library.

Dr. Blake: First, I would like to extend the Library's welcome to all of you and to say how delighted we are to join with the Josiah Macy, Jr. Foundation in sponsoring this conference.

You are all aware, I am sure, of the Library's longstanding interest in the history of medicine. It goes back a good hundred years, when John Shaw Billings determined that he would set up in this country at least one institution where the physician would be able to find whatever medical literature he might need. Billings sought out the writings of the past as well as current publications because he felt they were essential for studying not only the history of medicine, but medicine itself. To make the information in the collections available to the profession, Billings inaugurated the *Index Medicus* and the *Index-Catalogue*, which are still among our principal tools for bibliographic research in the history of medicine. In addition Billings wrote a number of significant papers on the history of medicine, for example, his work on the history of surgery.

This tradition was carried on most ably by one of the country's best known historians of medicine, Fielding H. Garrison, whose *Introduction to the History of Medicine* is probably referred to more often, even today, than any other work in this field. Acquisition, cataloging, indexing, and dissemination of the historical medical literature and contributing to historical scholarship are still among the Library's functions today.

Recently we have also sought to foster the history of medicine more actively. A few years back, as many of you know, the Public Health Service, led by the National Institute of Mental Health, began supporting the history of medicine. In the last year or two, the National Library of Medicine has accepted part of the responsibility formerly carried by the National Institute of General Medical Sciences for the support of the noncategorically related areas of the history of medicine, by funding a limited number of research and training grants. We have felt that one of the most important needs in the history of medicine is for training those who will become teachers in the years ahead, when, as we all hope, programs develop in a number of medical schools. For this reason we have been particularly pleased that we have been able, in the last year or two, to support two training grants.

I should like to add that we are also hopeful that the Medical Library Assistance Act, which was passed in the last Congress and which has just recently been funded in part, will, in the next few years, enable us to expand our activities in this field along the lines that we have already started. We plan to develop a program of special fellowships for senior scholars with an established reputation who might like to take some time off from their usual duties to pursue a period of free research. Of course we hope that some of them will come to the Library itself to carry on their studies.

In addition, we expect that through the Medical Library Assistance Act it will be possible to assist at least some of our medical libraries in the country to develop their resources for research and teaching in the history of medicine—not for the acquisition of "rare book" collections but rather for the development of collections which will be used in association with a well-thought-out plan of teaching and research.

Because of these interests, the Library is very pleased to join with the Josiah Macy, Jr. Foundation in sponsoring this conference on "Education in the History of Medicine." With the Macy Foundation, we trust that this conference will stimulate a greater interest in the history of medicine not only among those here but also among a wider group who may read the proceedings. We hope that it may help to inform them about the significance and uses of the history of medicine and also give them ideas as to how they may go about developing their own programs. We are delighted to welcome all of you here for this meeting.

Dr. Bowers: One of the things that has impressed me a great deal as an outsider, whose interest in the history of medicine goes back only to Nagasaki and Hiroshima, where I had the pleasure of spending two years, is the fact that there are many roads to Rome. There is a need for flexibility. This was very well stated in a letter that I received the other day from one of our Nobel laureates who wrote to me about the history of medicine. I will read it and then hope that this may be a part of our discussion in the next few days.

The letter reads: "History is the study of recorded knowledge. The library is the repository of this knowledge. The two should work together. History extends from the present moment all the way back as far as records go. All this is self-evident but neither students nor faculty now have the concept of history as pervading all thought, both retrospective and prospective. A vast amount of present day research simply represents work already done and done well. Faculty and students should be more alert and more learned.

"An observant student can also learn much more than this from

reading in the history of medicine. How to write and how not to write. How to deduce conclusions from evidence. How to identify the origins of error and its perpetuation and so forth. All this concerns modern history. Ancient history has its own values, both scientific and cultural. The point is that a school of medicine could do a great service to itself and to medical education in general if it were to establish a department of the history of medicine closely allied to the library, with interests extending from the present to antiquity, and with a leader who could make himself an active and contributing force in the life of the school and of the university as a whole.

"The history of science and the history of medicine should be encouraged. It is most important to maintain and strengthen interrelations between the university and the medical school in these subjects. There is still some interest in the history of medicine among medical students, but this is quashed"—and this by a clinician; I might say it is Dr. Dickinson Richards, although he did not give me permission to read it—"this is quashed during the later clinical years. There is no effective interest among the active medical school faculty and stimulation of such interest in both faculty and students should be the first order of business, to create a more favorable climate of opinion before a full time member of the faculty should be brought in.

"History in this field can be a number of things. There is a history of science, meaning by this narrative or descriptive biographical accounts of the men and their times. There are historical descriptions of diseases, of ear aches. There is even a biographical literature about individuals who themselves have been interested in the history of science. But the true historians of science are more than this."

I think this is provocative: "They dig deep and they not only have full knowledge of men of science themselves but they have both understanding and critique of the discoveries and ideas that these men brought forth. As examples one would cite A. N. Whitehead, L. J. Henderson and George Sarton. Such a man is obviously exceedingly hard to come by"—I am sure we all agree with this—"but also worth waiting for. If we could ever get one, our students would come running to listen to and work with him."

I was very impressed with Dr. Richards' comments. I think they do emphasize the desirability of recognizing many approaches to the history of medicine and here was one written thoughtfully by a man who is a great scientist.

THE "NEW WAVE" IN THE HISTORY OF MEDICINE

Lloyd G. Stevenson

Dr. Bowers, Dr. Blake, ladies and gentlemen. I ought to say first of all how glad I am to be here at this Josiah Macy, Jr. Foundation Conference held in cooperation with the National Library of Medicine.

Everyone here present has probably been aware of the fellowship program which the Macy Foundation has launched. I think most of us have not before heard about the development grants just made to Columbia University and Harvard University, and I think this is a wonderful thing. I think we should all rejoice in this piece of news. I hope I will not be suspected of malice if I say that it could not have happened to a nicer pair of universities or a pair that needed it more.

The day before yesterday, on Monday, the 20th of June, 1966, the Litchfield County Medical Association celebrated in Lakeville, Connecticut, its 200th birthday, confirming its claim to be the oldest county medical society in the United States. This was the occasion for "A Symposium on our Medical Heritage," and since this symposium occupied a whole day, with a further, more ceremonial session in the evening, one might have supposed that the busy physicians and surgeons and others who attended it, as well as the busy men who arranged it and took part in it, were motivated to some degree by an interest in the history of medicine. I believe there was every evidence that this was so. Nevertheless, I had two casual encounters during the intervals of the day which confronted me with the inevitable question I am accustomed to face at any sort of medical meeting at which no special interest in the history of medicine can be assumed. During the course of the morning I was asked by a urologist, during the course of the afternoon by a dermatologist, "What is the use of the history of medicine?" It has since occurred to me that I might have told the urologist that the study of medical history promotes a flow of mind, and I might have told the dermatologist that it allays, thought it does not remedy, an itch to understand. I am glad to say that I did not yield

to any such temptation and that I tried to give to each of my questioners a serious reply. Historians of medicine have trouble enough without acquiring a reputation for lightness of mind and levity of spirit.

The problem has not been disposed of. The assertion has been made more than once that Lanfrey's *History of Napoleon* contributed to the downfall of the Second Empire. Since no historian of medicine, in his capacity as historian, is likely to play any part in the creation or destruction of a government, and since he is equally unlikely to push forward the frontiers of science, what can he be said to do? The late Professor Sigerist once told me he had to teach politics to Premier Douglas. I have never had the opportunity to discuss the matter with Mr. Douglas, but this has always seemed to me like teaching a seal to swim. Other historians have even ventured to lecture scientists on scientific method. Whatever special, individual exceptions it may be necessary to make, neither of these two kinds of enterprise appears to hold much promise of general utility. And yet American society still asks the question, a purely rhetorical question, obviously self-answering, which Benjamin Franklin put to Polly Stevenson in a letter, "What signifies Philosophy that does not apply to some use?"

In 1957 Dr. Iago Galdston edited a little book *On the Utility of Medical History* embodying the proceedings of an Institute on Social and Historical Medicine at the New York Academy of Medicine. It contains some very good answers. This book, however, and an accumulation of journal articles over the last decade, have not succeeded in silencing the doubters. In my opinion this is just as well. It is also perfectly natural, in the sense that it was altogether predictable. Remembering always that less utilitarian philosophers and scientists than Benjamin Franklin have made more far-reaching contributions to the growth of science, and remembering also the sterility of medicine's own long-continued emphasis on immediate use, let us suspend for the present any exposition of the utility of medical history until there is more to expound. Let us take it for granted that our audience comes from Missouri. Let us show them rather than tell them. In short, let us get on with our business.

It is in order to help us get on with our business that this Conference is being held. The question none the less arises, why have we come together at this particular moment to discuss the role of medical history in medical education? Although a comprehensive, on-the-spot survey of university and medical school activity in this sphere is badly needed, there is already, I think, a good deal of evidence at hand that the nation's concern for the history of medicine has increased, that it is both more widespread and more serious than it was, say, ten to fifteen years ago. How has this come about? I do not believe, for reasons already

indicated, that the profession has been seized with a strong sense of the actual or potential utility of history, but if it is indeed true that interest is rising, how are we to account for it?

No doubt it is safe enough to say that an affluent society will undertake the support of ventures which less prosperous societies do not feel they can afford. The streams of support, however, may be turned into many different channels, and there is no lack of academic fields to be watered. I do not think it can be established that general affluence and the history of medicine bear any close and particular relationship one to the other, although it is true that the European nations, Germany and Switzerland, which nurture the history of medicine best, are among the strongest economically on the continent. To suggest, in any case, that only now can the United States begin to afford such a luxury is obviously preposterous. The funds required to double, triple, or quadruple present support would hardly pay the fuel bill of a single moon shot.

It is possible, indeed likely, that only now are we feeling the full effects of what Ackerknecht has called the "Osler–Cushing–Garrison wave of 1900," which was followed, thanks to Welch, by the Sigerist impetus, and sustained also by Fulton and others. But how can we account for a certain lapse and delay, for the episodic and scattered character of the response?

It is also possible, I think, that physicians and educators have become increasingly concerned about what may be called the "Snow pit"—the abyss which is alleged to have opened between the "two cultures," science on the one hand, the humanities and similar studies on the other. This may account in part for the rise of the history of science as an academic discipline. It is tempting to suppose that this surge in the history of science is carrying the history of medicine along with it. It is only a generation, however, since George Sarton complained, not without a trace of bitterness, that the history of medicine possessed all the institutes and all the chairs. In thirty years the situation has altered completely. The Duane Roller report, despite the deficiencies imposed on it by the questionnaire method employed, offers overwhelming evidence of the very great increase in the teaching of the history of science. It varies in its degree of autonomy, in its location in the departmental structure of universities, and in the number of courses, from one to six, even eight or ten, which it has to offer, but here and there all over the country it has made a beginning. Twelve institutions now offer advanced degrees. The number of persons involved in one way or another has become large enough that at the end of the present year a directory will be published, to provide their names, addresses and appointments. The factors behind this development are almost certainly among the factors which have stimulated the more

modest new beginnings which are now also apparent in the history of medicine.

Perhaps simpler and more mundane considerations should attract our notice. There is nothing like supply to create demand, at any rate in the world of fellowships and grants. The availability of funds from the National Science Foundation, and more especially from the National Institutes of Health, has made it possible for young men and women to undertake training, and for men and women of any age to undertake research, in medical history. Useful and important as these funds have been and continue to be, they are of course relatively minuscule when compared with the funds devoted to science. Governmental support of science, although its relation to skyrocketing need and demand is beginning to make it seem much less lavish than it did, has been established on a very large scale. This has left the foundations with a different role than William Henry Welch envisaged for them. It has confronted them once again, as they were confronted at his time, with the challenge to explore new fields and to augment the resources of neglected disciplines in a selective, insightful and stimulating way. Foundation activity, however, must be viewed by the historian in both its aspects—not only as a stimulating, or causal, factor, but also as a consequence of prior changes in thought, changes in society, and changes in the needs of its time. Many years ago the Rockefeller Foundation made possible the establishment of the Institute of the History of Medicine at the Johns Hopkins University, the most important single event, with the exception of the founding of what was to become the National Library of Medicine, in the history of the history of medicine on this continent. Nevertheless, looked at as a seminal institution from which the discipline was meant to spread, its success has been very limited, owing to the infertility of the soil of the United States during the period of its existence rather than to any seminal deficiency in Baltimore. Little further institutionalization followed. The widespread influence of the Johns Hopkins in other spheres was not matched in this. Everything else to which William Henry Welch put his hand has flourished. This latest and last of his enthusiasms has maintained itself, has struggled valiantly, but has not as yet established a pattern for the nation. A foundation, therefore, even a very rich foundation, can only go so far if the *Zeitgeist* does not concur in its doings.

While this relatively disappointing story unfolded in the United States, the institutionalization of the history of medicine in Germany, following on the Sudhoff–Neuberger wave of the earlier years of the century, proceeded apace. The reasons for the difference ought to be elucidated now. One of them, surely, was the character and distinction

of German education in general, which supplied the necessary humanistic background for such efforts. Another, I think, was the power and repute of German medicine in the 19th century. So far as national history is concerned, the United States of the Osler era still had more to record of promise than of achievement. In the second respect, though not in the first, this country has now reached a point, its own medical history having achieved first-rate international significance, at which it need not fear comparisons. Whether we applaud or deplore the national element in international enterprise, we must recognize its presence.

It is all the same undeniable that the history of medicine, like medicine itself, is fundamentally international in kind. If some German scholars regarded themselves as the special heirs or trustees of Greece, German scholarship none the less, in fact all the more, addressed itself to the problems of Greek civilization and Greek medicine. In Italy, where the historical link with Greece was of course more direct, this was also true, and in France, in England, in every nation of Europe, to a greater or less degree, the old classical emphasis in education was reflected in medico–historical activity, great or small. The nearly universal Latinity of medicine from the Middle Ages to the 18th century provided it with an international literature to be studied in an international spirit, and something of this spirit carried over to those belated readers called historians. American medicine arrived on stage a little bit too late to participate in this waning internationalism. It was never really a part of the great world republic which embraced language, letters and science. Its original colonial status, however, assured it of close ties with Europe, and subsequently, as Paris first, then Munich and Berlin, replaced Leyden, Edinburgh, and London as its schools, its models and its judgment seats, it developed new links of enduring strength. Its growth to full maturity coincided in some measure with an absolute as well as a relative decline in European medicine, largely owing to the overexpansion of educational facilities in Italy, Germany, and France. America began to feel itself cut off from the world at large, even from Western Europe, its onetime medical mentor, in the quality of its medical services and more and more in the quality of its research. The gap was not visualized as one of uniform width in all the divisions of medicine, but in almost all it appeared to exist. At the same time, a number of European nations displayed a tendency to social experiment in the distribution of medical services, which was viewed for the most part with anxiety and alarm on this side of the Atlantic. Germany, the last of the great medical preceptors abroad, was foremost in such experiments, which attracted particularly unfavorable notice here between the turn of

the century and the outbreak of World War I. Thereafter, nothing German could be good. Between the wars, political isolationism flourished. After World War II a determination of Congress to advance the cause of medicine by voting enormous sums for the support of research appeared for a time to leave Europe nowhere.

This era of comparative isolation, self-dependence, and self-satisfaction is drawing to a close. The old-time isolationism in politics may not be dead, but it has long since yielded to a one-world policy of international aid and intervention, which is already old enough to have lost its first complacency. More recently still we have come to realize that Europe, which has shown amazing recuperative powers in the economic sphere, is very much alive scientifically, too, and that hardly the most remarkable of American medical laboratories but has its counterpart abroad. America continues to lead the world in almost every category of advancing medical science, but when Uncle Sam looks over his shoulder he can perceive that his lead is narrowing.

During the last generation, while some of these shifts and revisions have been taking place in the special domain of medicine, though not without wider concomitants, political and social historians have been busy—some of the leading spirits at least—in narrowing the Atlantic. It is no longer fashionable to trace the forms and functions of American society solely to the peculiar conditions of the Western frontier, nor even, Professor Toynbee to the contrary notwithstanding, to the undoubtedly challenging climate of New England. Continuity with European civilization, even at the level of the organization of village and town, has received increasing attention. In this climate of opinion, activities such as science and medicine, which have never really forsworn their international status, may be more than ever impelled, or at any rate inclined, to search out their roots.

One whole sector of the history of medicine—the social history sector—has felt a strong impulse from social historians of wider compass. This tendency is strikingly represented by the writings of Professor Shryock. Serious academic social history, seeking hints and explanations at every level, has been supplemented by the more widely popular variety of social history which concerns itself with buildings, vehicles, implements, weapons and coins. Here the inspiration seems to be largely, though not exclusively, national. Antique American furniture, fire buckets, and nutmeg graters are complemented by doctors' saddle bags, cases of homeopathic drugs and villainous saws and lancets.

Interesting, informative, and important as all varieties of social history may be, the clues to the interaction of science and society, of the medical profession and the people it has served, attract and rightly

attract the greater part of the notice and effort of these academic historians who labor in their own corner of our extensive field. Technology forms an intermediate element which doubtless merits greater attention from the social historian and the historian of science, but except insofar as it may yield clues to the understanding of vital social issues, it may well appear to belong to a second order of priority. The growing complexity of our present society, of which medicine's current predicament is not the least striking manifestation, is nevertheless compounded by the growing complexity of medical technology as well as medical science.

That medicine faces a serious predicament we cannot doubt. I feel sure that the history of medicine, for all that the "forward look" is enjoined upon us daily, has become a matter of interest largely because medicine itself is increasingly of interest to the 20th century. It is a part of every life. It is a part of the exploration of space. It is more than ever a part of politics. It has not lost all its glamor to other sciences and other forms of service. In one sense, it is obviously effective. More and more of it is wanted. In another sense it is obviously ineffective. More and more its absence is bewailed. In the course of the last few months I have counted feature articles in seven magazines of national circulation, magazines of all shades of political opinion, bearing some such title as "The Shame of Medicine," or "The Scandal of Our Doctors." What this means—too much socialization or too little—depends on whether the shame and scandal are cried up by the *National Review* or the *New Republic*, by *Life*, or by *Harper's*. Meantime the popularization of medical science, and more particularly of innovations in therapy, has by no means diminished.

It is commonly supposed that "general history" or "straight history," by which is usually meant political history, has always and everywhere outweighed the more specialized kinds of history and certainly those associated with the various professions. This is not altogether true. Ecclesiastical history and the history of law were provided with well endowed chairs at Edinburgh, for example, long before civil history, ultimately renamed modern history, had any place at all. Religion and the law, with both of which, of course, politics were closely associated, were the central interests of an older society. It is surely not surprising that the history of science and medicine should in course of time achieve important status in the new society to which science and medicine are enormously important.

I think it may serve to encourage those who make comparisons damaging to medical history between this comparatively young discipline and general, political, or constitutional history to observe how recent has been the rise of historical studies of any kind in the aca-

demic setting. The first trained historian to be appointed to the Modern History Chair at Oxford was the immortal Stubbs. He was named to his chair just one hundred years ago, in 1866. At the same time Cambridge selected a popular novelist to man the corresponding post in the rival institution. Outside the faculties of divinity and law, history played no part whatever in the Edinburgh curriculum for a first degree until 1894. The struggle to introduce it had gone on intermittently for 150 years.

I began by eschewing discussion of the uses of the history of medicine in order to discuss the more immediate reasons for our coming together in Bethesda. I have had to deal with some of the uses assigned to medical history after all, but I have not dealt with all of them. It was once the proud claim of other kinds of historians, as Sir Philip Sydney satirically observed in a famous passage (an early example of the "debunking" of history) that they were qualified to teach virtue to mankind. Medical historians are sometimes supposed, possibly *faute de mieux*, to have something to teach in relation to medical ethics. Is not the Hippocratic Oath a part of their domain? "Culture," too —Culture, that is, with a capital C—they are sometimes expected to inculcate, the objects of their attention being already Bachelors of Arts or Bachelors of Science. I have more faith in the possibility that, if virtue and culture do not issue from their lips in easily assimilated form, they may yet be able to teach, in the sense that other historians are able to teach, that special form of wisdom which is history's special gift. Social considerations may help to instruct us in what to study and what to teach, and this wisdom of understanding, wisdom of approach, wisdom of limitation may well be required of us if nothing else, if no pat solutions or ready-made answers to difficult problems.

These problems of the interaction of science and society may also fall to the lot of the medical sociologist, but increasingly the sociologist may feel the need of historical as well as current data. Aims and techniques may both be handed off, as it were, to the medical historian at the same time that he is asked to provide both data and techniques of his own. What he is to regard as "significant" may also be suggested to him—and here we move over into the history of ideas—by the scientist. Current developments in science are forever redirecting attention to the forgotten work of the past or to unnoticed aspects of work with which we have long been familiar.

I should like to suggest that the historian, while welcoming these outside stimuli, should cherish aims of his own. His love of the past, lacking which he could not be a historian, may be looked upon as the equivalent of the scientist's widely advertised curiosity—it may in

fact be much the same thing in a different order of ideas. If curiosity is the parent of "pure" science, love of the past, or curiosity about it, may be the parent of a kind of history which lacks ulterior motive, which does not set out to be of use to anybody. If it is fully intellectual in character, it need not lead, it will not lead, to preoccupation with trivia. It is the kind of history which promises most in the way of truly original insights, this taking the past on its own terms, this concern for what preoccupied our ancestors, what filled their minds and shaped their decisions and molded their acts. Scientists were once upon a time accused, and sometimes rightly accused, of addressing themselves to trivial matters. A good mind untrammeled may lead to good results in either case—to good science on the one hand and good history on the other.

It seems to me that one of the more cheering factors in the current situation—it is possible of course that I am too optimistic—is the accessibility to students of ideas which bear no taint of Jeremy Bentham. It is not, I think, a matter of "requirements" only, whatever their importance may be in the teaching of medical history. The contemporary student has his eye on the goal, no doubt. But what is the goal? Is it not conceivable that goals are changing? Ten years ago some 50 percent of the graduates of Yale College headed at once to New York to work on Wall Street or Madison Avenue. The percentage is now down to five or six. Many, of course, go into the Armed Forces, and others take advantage of the new wealth of fellowships in many institutions to enter graduate school. It is surprising, none the less, how many enter the Peace Corps, how many seek jobs with industry in remote corners of the world, how many undertake to teach. There is even reason to suppose that in many cases money is not the chief, or at any rate no longer the immediate objective. Is prosperity now taken for granted in an affluent society, so that the dollar chase can be put off a bit? Is it, on the other hand, personal or world instability, or both, which is changing these habits? According to recent reports, student preoccupations are more likely to be personal than social. These personal problems, however, may be ethical—or they may represent a search for widened experience, or a search for personal identity. They result in a restless, questioning and unsettled state which may be either good or bad. Even although excessively long hair is less evident in medical schools than in colleges—at any rate among the students—behavior patterns and interest patterns are changing in medical schools too. "The thing to do" is not necessarily the thing to be done—sometimes, rather, the reverse.

Some of their seniors are restive too. Professor Chain has recently complained of what seems to him to be the slowing pace of discovery.

Complaints of the routine character of much scientific research are common. A quest for new modes and new models is forecast.

This is an age of new worlds and of new nations. Patterns of medicine and society are seen to be in flux, not only in the Western world but elsewhere. Contact has been established over a wider front with different cultures, even different systems of medicine. Greater travel facility is widening horizons. Teachers and taught are affected as well as funds granters and administrators—all at the same time.

Whether or not they are explained by this conjunction of factors, opportunities exist for the development of history as a discipline, as a way of thinking. They should not be exaggerated. Apathy also exists. Neither should these opportunities be neglected. Like all challenges, this challenge is accompanied by dangers. Overexpansion, second-rate teaching, second-rate work—these may be the first consequences of the new developments, if indeed they come about, in the history of science and the history of medicine. The next ten years may form the guidelines for the future. Let us not cheapen the product. At the same time, let us not hold back.

WHAT MEDICAL HISTORY SHOULD BE TAUGHT TO MEDICAL STUDENTS?

George Rosen

When I received the invitation to attend this conference and to present the position paper on "What," it seemed to me that the question, "What medical history should be taught to medical students?" could be answered very quickly and easily. One could teach them what medical history one wanted them to remember, and let it go at that. But the question is, what kind of history does one want them to remember? So perhaps it may be necessary to expand on that answer. That is what I shall try to do this morning.

It might be best to start with the premise that all education presupposes some ideal or goal, and medical education is no exception. The purpose of a medical school is to develop a physician who will come as close as possible to the ideal. However, it is also important to keep in mind that the aims of medical education are not immutable. They have changed in the course of time, and the process continues, because the changing ideals and aims of medical education are a response to changing conditions in society, reflecting the tasks which confront the medical profession.

Since the end of the nineteenth century and to an increasing degree from the 1930's, the physician in practice and research has become inextricably intermeshed with the complex organizations that have been developing for the increase of health science and the provision of health care, organizations in which the laboratory and the hospital have come to occupy crucial positions. This development is part of the large social changes that are occurring in our society. We have changed from a rural to an urban society, from an agricultural to an industrial society, and we are continuing to move ever further in this direction.

In such a society, medicine and its practice are bound to be different from that of the past. For one thing, the range of scientific knowledge relevant to medicine has been immensely broadened and deepened in the

past few generations. There has been a reduction in the empirical approach and an increasing endeavor to teach medicine on the basis of scientific principles. Hand in hand with these developments have come a more extensive, more precise, and more effective technology, as well as a variety of organizational systems to operate it. There is no escaping the fact that medicine has become highly organized and that public and private organizations already control the destiny of health science research and health service. As an example, try to imagine medical practice in our time without the products of the chemical, electrical, and metallurgical industries, or the various services of hospitals without the funding provided by prepayment organizations and government. Indeed, one of our problems at present is the need to draw appropriate parameters around the broad system and to define the complex elements or subsystems within it, in order to be able to operate it as efficiently, as rationally, and above all as productively as possible.

As a result there has arisen a growing need for a new kind of physician to deal appropriately and adequately with the health problems of such a social order. In the past, the physician was at various times a priest, a craftsman, a medical jack-of-all-trades, and a scientist. Today, he must be scientifically trained in the physical, biological, and clinical disciplines, and oriented so that he will be concerned with and knowledgeable about the place and function of medical care in a highly organized, complex industrial society. Of equal significance, he must be sensitive to and able to deal with social as well as biological components of ill health in individuals and in the community. Finally, we must expect a continuing expansion of functional specialization in the health services, and consequently greater complexity. For these reasons, the education of the physician must provide some understanding of individual and group behavior, of the principles of collaboration with other health personnel to whom he may be delegating some of his current functions, and most generally of his professional role and his place in society.

Progressive medical educators have recognized these developments and the educational aims they entail. Endeavors to achieve these aims in medical education have developed an awareness that the traditional staples of the curriculum are not sufficient for the purpose. Slowly, hesitatingly, but increasingly, attention has been turned to other disciplines and their possible contribution to the education of the medical student, the future physician. Most recently, schools of medicine have begun to consider the teaching of medical history within this context, and a number of schools have introduced it into their curricula.

To understand this trend, it is necessary to see it within the perspective of the present situation of medical history in the United

States and of the recent changes leading to it. The historical element is not new. Medical history has been taught in medical schools in various parts of the world for the past two and one-half centuries.[1] To be sure, the emphasis given to the subject has varied in different countries and at various times. Until about a decade ago, apart from a few outstanding exceptions, the attitude in American medical education toward the history of medicine was either equivocal or negative. Scant recognition was given to the history of medicine by American medical schools, largely because of a negative evaluation of the subject. Within the past few years this attitude appears to have been changing, so that today there seems to be a more positive view of the teaching of medical history in an increasing number of medical schools. As previously indicated, this development is due in part to a recognition of the need for broadening the social and scientific horizon of the medical student to enable him to comprehend the current situation of his profession and the complex health problems of the present. There is no doubt that this trend has been fostered and strengthened by the decision of the National Institutes of Health to support research and training in the history of medicine.[2] Another important, though very recent development, which will provide further support of this trend, is the action taken by the Josiah Macy, Jr. Foundation to interest itself in the teaching of medical history.

Increasing recognition of the value of medical history is based not only on awareness of its potential contribution for the education of students, but also on an acceptance of its value for those engaged in medical practice and research. Realization of this value requires that medical history be taught in terms of stated pedagogic objectives and by one or more methods.

The pedagogic objectives in teaching the history of medicine can be stated as follows:

1. To show the development of medicine as a whole by emphasizing its continuity in time and in terms of the recurrent elements which characterize it.
2. To deal with the problem of change in medicine. By analyzing changes in the past, the student may be helped to recognize the forces that have shaped medicine until now (political, economic, social, religious, philosophical, and cultural) and that may reach into the future, so that he may in some degree be prepared for changes which will continue to occur.

[1] Rosen, G. The place of history in medical education *Bull. Hist. Med.* 22:594–627, 1948.

[2] Sapir, P., and Brand, J. The National Institutes of Health research grant program and the history and sociocultural aspects of medicine. *Bull. Hist. Med.* 33:67–74, 1959.

3. To lay bare the origins of medical ideals and values, to explain their role and significance, and to show how the translation of medical and other values into policy is historically conditioned.
4. To show how medical and scientific knowledge has evolved, so as to make possible a more correct exposition and understanding of medical theories, doctrines, discoveries, and practices. By showing students that knowledge in one medical discipline is of value in comprehending apparently unrelated developments in other branches, one may also tend to counteract somewhat the extreme effects of specialization.
5. To develop a sense of historical perspective, and thus a salutary, critical point of view toward fads and modish trends in medicine.

Several methods of teaching medical history have been advocated, but before discussing them certain general points must be emphasized. History does not come conveniently prepackaged, ready to be served like a TV dinner. Both teacher and student must have some frame of reference, some pattern or principle in terms of which the historical data can be most meaningfully related and ordered. But as that well-known historical guide, *1066 and All That*, reminds us, "History is not what you thought. It is what you can remember." If we keep this point in mind, the question of teaching may be restated as follows: What shall we teach and how shall we teach it so that students will remember what we hope they will.

Some propose that medical history should be taught by the so-called Oslerian method, that is, by integration of historical material with a specific medical subject, whether it be bacteriology, pediatrics, or surgery, by the preclinical or clinical teacher. There is no doubt that in the hands of a good teacher such an approach has much to recommend it. A student's interest in a specific topic can be aroused and a historical view can be developed around the particular subject. Nevertheless, there are obvious and serious limitations. Medical scientists and clinicians who want to use this approach must have a good knowledge of medical history, and this is not always the case. Another variation of this approach is to have a medical historian participate in the preclinical or clinical course, most often by giving a lecture. This may be a workable arrangement in some cases, but more often than not it is difficult to achieve any real integration. Moreover, integrated teaching has an even more basic defect; it cannot present the development of medicine as a whole. The teaching of physiology offers an analogy. Suppose a medical school had no department of physiology, and the cardiologist dealt with the physiology of the cardiovascular system, the gastroenterologist with the physiology of the gastrointestinal system, and so forth. Where would the medical student obtain an inte-

grated view of the normal functioning of the human organism? The point is that even though integrated teaching of aspects of physiology in clinical courses is practiced in medical schools, there are also departments of physiology offering systematic instruction and carrying on research. While taking account of the differences between medical history and physiology, the principle expressed above applies as well to the former as to the latter. In short, the minimum requirement for the teaching of medical history is an organized course in the medical curriculum. Such a course can and should be complemented by integrated teaching, as well as by other means—elective courses, research seminar, medical history club.

This position raises several questions: What should be taught, and on what basis should such instruction be organized? At what point in the medical curriculum should medical history be taught? And who should do the teaching?

In my view, the basic premise which should underlie any systematic teaching is that medicine is an integral element of society. Intimately related to this point are two other premises. First of all, the various elements of a society are related to each other, as parts of a social structure. Thus, to understand the emphasis on prognosis in Hippocratic medicine, one must understand the way in which the Greek physician practiced. Furthermore, to understand the actual practice of medicine in the Greek *polis*, one must examine not only medical theory, but also the social structure of the *polis*, related attitudes toward manual labor, and the consequent differential provision of medical care by social class, as indicated, for instance, by Plato's vivid contrast of the medical care available to the slave and the free manual worker with that obtained by the wealthy man.[3] Again, the increasing systematization and standardization of medicine after Galen can be understood better if viewed as part of the process of standardization and immobilization of political, economic, and social life undertaken by Diocletian following the shattering crisis experienced by the Roman Empire in the third century.[4]

Secondly, the structural concept must be linked with the concept of history as process, with all that this implies in terms of genetic and causal relations. From this viewpoint, the teacher of medical history can present medicine as one of the relevant, constituent elements in the existence and behavior of a society, dealing with it in terms of the continuities and changes experienced by society and medicine in the course of time.

[3] Plato. *Laws* 720 c.d; *Republic* 3.406c.

[4] L'Orange, H. P. *Art Forms and Civic Life in the Late Roman Empire*. Princeton, N. J., Princeton University Press, 1965.

By placing medicine in a social context, by showing the interrelationships of medicine with other aspects of community life, and by indicating the interactions and their effects as they occur in time, the student can be given a sense of order and direction. This orientation enables the student to see what otherwise would be a mass of detail as having a coherent and meaningful development. Once the student has a frame of reference—a pattern of development in terms of which facts can be related and ordered—the various elements in the history of medicine—physician, patient, theory, practice, research; prevention, diagnosis, treatment—can be brought into focus and presented in a way that makes sense.

Obviously, this approach cannot employ the method of integrated instruction. A formal course is required, with a minimum length of 16 hours. If more time is available, so much the better. Within such a course, it is possible to introduce the student to the basic structural elements for various societies and historical periods and to indicate social and medical relationships.

Within this framework, the student can be introduced to a society or a period with its political, economic, social, and other aspects. With broad strokes the mood of a culture can be painted. Is it an age of anxiety or one in which new worlds are being discovered? The student can then learn about the population with which the medical profession is concerned in terms of age, sex, occupation, social class, mode of life, and other relevant facets. Linked to these topics are the health problems of the population, as groups and as individuals, namely, the kinds of diseases characteristic of the population and their prevalence, changes in patterns of disease, and problems of community health. The problems of ill health lead logically to the healers (medical men and others) who endeavor to cope with them. Here the teacher should present the recruitment, education, and organization of the profession, as well as its social position, e.g., physician and surgeon in the Middle Ages, general physician and specialist in the nineteenth century.

Closely linked to the preceding areas of discussion are medical theory and practice as well as research to advance medical knowledge. These are important topics, and the student should be given a realistic view of the relation between theory and practice and should be shown how medicine was actually practiced at different periods. This may be done by introducing medical as well as nonmedical sources. For example, Benivieni and Cellini for the Renaissance, Ramazzini and Mme. de Sévigné for the seventeenth century, J. Marion Sims, Balzac, and George Eliot for the nineteenth century would all illuminate medical practice from various viewpoints. Furthermore, theories come and go, while practices survive and are not infrequently rationalized in

terms of a currently modish theory. Finally, attention should be given to nonmedical factors that influence medicine and to medical developments that influence other sectors of society.

It is obviously impossible to illustrate the application of this approach in great detail, but it may be of interest to present in outline form its application to Greek medicine. These topics should be discussed:

1. What we know about early Greek civilization and culture, including health problems, based on archeological and literary evidence (Homer and Hesiod).
2. Evolution of Greek society from the archaic to the classical period. The city–state and its social structure: Nobles, citizens, foreigners, women, slaves. Population problems. Colonization. War. Infanticide.
3. How the Greeks conceived health and disease.
   a) Religious views of disease: Possession *(keres)*, retribution, divine displeasure. Magic and religious medicine. Cult of Asclepius. Incubation. Votive tablets. *Plutus* of Aristophanes. Case of Aelius Aristides.
   b) Naturalistic views: Health a condition of balance. Macrocosm and microcosm. Relation to natural philosophy. Four elements. Four humors. Four temperaments. Analogy to Ayurvedic elements and humors. Disease a natural process. *Vis medicatrix naturae.*
4. The disease conditions known to the Greeks. Fevers. Chest ailments. Neurological and mental conditions. Communicable diseases. Wounds.
5. Community health problems. Epidemics, endemics, and public hygiene. Provision of physician's services (medical care). Limitations of public hygiene.
6. The Greek physician. Training by apprenticeship. Chiefly a craftsman and a peripatetic. Community physicians. Mode of practice. Methods of diagnosis and treatment available to physician. Relation of the emphasis on prognosis to mode of practice. Social status of physician. Hippocratic oath.
7. Internecine struggles and decline of the Greek states. Rise of Macedon. Spread of Greek culture. Alexandria and Hellenistic medicine. Medical research. Importation of Greek medicine to Rome.

The same approach can be taken to other periods. I wish to emphasize that the topics listed above need not all receive the same emphasis. Some will be used only as background material; others will be developed at some length. Nor need these elements be presented in the

order listed above. For example, one might start with health problems and develop the other themes as they seem appropriate. The same point applies to the introduction of individuals. Of course, one should bring in Hippocrates, Herophilos, Asclepiades, Galen, and others, but in relation to time and place. What I am proposing is a strategy for teaching medical history. The tactics can be left to individual teachers. A variety of sources can be drawn upon to provide the necessary illustrative material. Basic are the Greek medical and scientific texts. Among those that one would use are the Hippocratic texts: *Airs, Waters and Places, Prognosis* I, *Precepts*, the *Oath*, *Epidemics* I and III, the *Sacred Disease*, *Diet*, and the *Nature of Man*, as well as Aristotle and Theophrastus. In addition, other sources such as Aristophanes, Plato, Pindar, Thucydides, and various other writers may be drawn upon.

Clearly, this approach makes demands on the teacher, demands not made by other less comprehensive approaches. The requirements are a knowledge of history in general as well as of medical history in particular; a recognition of the need to look beneath the surface of events for trends and relations in order to understand historical change in its effect on medicine; and a knowledge of medical as well as nonmedical sources and materials so as to present the development of medicine and community health in a specific, plastic, and colorful manner. When successfully practiced, however, the rewards in terms of student acceptance and understanding are commensurately greater than with other methods.

Furthermore, the approach outlined above is what the teacher offers the student. What the student will accept and remember will depend on factors which the teacher must take into account. As far as possible he must try to determine what the student's interests are and work from there. Frequently this is not possible at first, so that the teacher must turn to the next possible tactic, which is to seize the student's attention. This can be done in various ways. I have played records illustrating how Islamic dervishes put themselves in a trance, the music used to treat *tarantati* in southern Italy, or the songs sung by the flagellants of the Middle Ages. Students may be asked how they would diagnose diabetes if they had no laboratory. The particular method does not really matter as long as the teacher is ready, once the student's attention has been seized, to follow through and make use of the teachable moment.

This is why it does not really matter much in which year of the medical school curriculum the teaching of medical history is placed. No case can really be made out for one year rather than another. At different stages in the student's career, the teacher must try to take

account as far as possible of his knowledge and particular interests at that time.

It should be noted, however, that if a medical faculty endorses the educational value of historical instruction, it should be prepared to have a course which is required, based on stated study materials, and completed by some form of examination. Students are tough-minded realists and recognize very quickly what the faculty really considers important—that is, the student interprets what he thinks is important for the faculty. One should never underestimate the informal channels of communication through which these interpretations are disseminated among students.

In any course on the history of medicine, the student should at least have an opportunity to become acquainted with the materials on which medical history is based. This requires accessibility to a library where original sources are available. And, in addition to printed or manuscript sources, other materials should be used to enhance the impact of the teaching. Among the materials that I have used at various times have been a replica of a medical cuneiform tablet, reproductions of medical miniatures from medieval manuscripts, an eighteenth century prescription for a mental patient, a replica of Laennec's stethoscope, pictures of hospitals by contemporaries, and slides made from a variety of sources. I have already mentioned the use of recordings where available, and films can also be employed if they are accurate. Maps are useful aids to help students locate places. The geographical knowledge of medical students is for the most part quite limited and should not be taken for granted. Auditory and visual stimuli should be used to provoke interest and to reinforce learning.

Finally, I believe that students recognize when a teacher deals with a subject which he knows firsthand and when he is simply accepting the views of others. Anyone who undertakes to teach medical history should as far as possible have examined sources directly. This does not necessarily mean that the teacher must also engage in research. However, it is generally accepted today that research stimulates teaching, and medical history is no exception.

And now to return to the question: What medical history should be taught to medical students? As I see it, the major objective in teaching the history of medicine to students in a medical school is to make it possible for them to learn how medicine, as we know it, arrived at its present state, to orient them to the historical problems and forces in the present, and to enable them perhaps to face the future more resolutely. The medical history taught to students should serve to explain and therefore lighten "the pressure that the past must exercise upon the present, and the present upon the future."

COMMENTARY

Lester S. King

Dr. Rosen has compressed a large amount of material into a relatively small compass and has raised a number of points which open the door to substantial discussion. I would like to approach some of the implied problems from a rather different viewpoint.

We here will all agree that medical history bridges the gap between the humanities and the sciences, and we will all subscribe to the view that Sigerist, for example, did so much to promote—that medicine lies in a matrix that is at once cultural, social, and economic, relating at the same time to philosophy, science and technology. If we regard medical students in the aggregate, we will find two principal types: those who have a serious interest in what we may broadly call the humanities, and those who do not. The latter, I fear, at present constitute the majority. The first problem I would raise is, how much effort should we, as medical historians, devote to those who do not have any significant interest in humanistic subjects? Differently stated, we may ask whether instruction in medical history should be compulsory or voluntary. For students deeply interested, the opportunity to pursue their interests should, of course, be encouraged. But, with the curriculum overcrowded, with all different departments crying for more hours, should we force a further curricular subject upon those who have little interest?

Unless we maintain that medical history is somehow an essential part of medical education, we would have little warrant for demanding that a substantial slice of the curricular pie should be devoted to medical history. We can, to be sure, claim that medical history makes doctors who are better rounded, more sympathetic, more alert, better educated, and more truly leaders in the community. But we cannot seriously maintain that it makes "better" doctors in any practical sense, that it will help a physician perform a more skillful appendectomy or arrive at a more precise diagnosis. Indeed, in the competition for curricular time the medical historian has a relatively weak case if he must struggle not only against lack of interest among the students, but also against aggression of faculty colleagues. I am now stating a personal opinion. I do not believe that medical history should be a compulsory subject in medical school. But, nevertheless, it can be strongly promoted and encouraged.

The problems of curricular time and student interest inosculate with another one regarding personnel. We can distinguish, among present-day medical schools, three distinct categories. There is the small elite

group which has full-time departments of medical history, professional scholars who devote themselves entirely to this discipline. Then, there is a further group with what we may call part-time faculty, that is, members who have strong interest in medical history but do not derive their livelihood there-from. Some of these schools may even boast chairs in medical history but, in the words of Bill Gibson, they are usually chairs "without a seat." And finally, there is a large third category of medical schools which can point to neither full-time nor part-time faculty interest.

I would like to concentrate on the schools of the second group, and consider the problem, what should they present to students who express an interest in medical history? Dr. Rosen has clearly and effectively emphasized the need for integrating medical history into both intellectual and social history. With this, I believe that all of us present will heartily agree. But consider the plight of the instructor. Available time may range, say, from 3 to 16 or 20 hours. How well can he bring out the facts of medical history, the problems involved, their relationships to intellectual problems of their day and the social milieu? All historians will discuss, say, the relationship between Galen and the Aristotelian philosophy. But how, in a few minutes, can we make this meaningful to students who have no knowledge of Aristotle to start with? How, for example, can we make the concepts of Form and Substance truly significant, in a lecture which must cover not only Galenic medicine, but Roman history and culture and the influences of Greece on Roman times? How can Paracelsus be saved from ridicule without an understanding of neoplatonism, or the eighteenth century systematists made to appear reasonable without a knowledge of Bacon? But, if time is spent on these philosophers, there is less time available for the strictly medical figures.

The major problem, obviously, is how to limit the subject matter. Granted the desirability of teaching medical, intellectual, and social history in a unified way, we must present either a small amount in some depth, or a larger amount quite superficially. I, personally, must come out quite strongly for a small amount covered in depth. In the teaching of medical history and the maintenance of student interest, I perceive the kiss of death in the broad and superficial survey that fears to leave anything out, the survey that believes that a mere mention conveys some particular virtue. I recall how in college the very thought of History I, the survey of all Western history from the fall of Rome to 1815, killed off all of my interest in history. I would avoid that in medical history.

The question of limited subject matter is immediately relevant to the problem, what form should the instruction take? Will it be through

lectures? How much reading, if any, can be required? Will there be an examination, a term paper?

My own prejudice lies strongly against formal lectures. These foster what I call the television mentality Much rather would I have small discussion groups which will read a text together, the faculty member acting as discussion leader and resource personnel who can lay out the background, indicate the general problems, and (often by Socratic method) lead the group into perceiving for themselves the specific problems and applications through firsthand study of the text.

I feel strongly that, at least for any institution that does not have a full-time department of medical history, the content of medical history instruction should be a small number of authors read in depth in a seminar-type course which can permit free discussion. And preparation of a paper should be mandatory.

Some have claimed that instruction in medical history should at least make medical students familiar with the great names in medicine and the great landmarks in medical progress, and that the lecture is the best way of achieving this. The student may emerge from such a course with no feeling whatever for the realities of the past. He may, to be sure, carry away a list of names which will permit a sage nodding of the head when he encounters these names later in life. I do not believe, however, that such head-nodding contributes significantly to the culture of the individual. It is much better, I believe, to study in depth a small part of the past, even in a hop-skip-and-jump fashion, than to soak up a series of names and events. And it is the effort which the student makes in reading the books and discussing them with a competent teacher which renders the past meaningful.

If the subject of medical history is to be taught in episodic fashion, the particular episodes chosen should depend on the instructor's own interests. The instructor should deal only with the topics to which he can bring both enthusiasm and knowledge. Students have little regard for instructors who can offer no more than textbook material.

A course in medical history is successful, not if it follows a standard syllabus, but if it kindles in the student some vivid appreciation of the past, even of a small area of the past, if it makes him see the medical figures as real flesh and blood, coping with real problems, in a real environment all too often harsh and unfriendly—in other words, makes him see the relation of the past and the present.

In addition to urging the seminar type of instruction, I would offer two further suggestions. Medical schools, through their admission requirements, control the preliminary education which students must have. I would recommend that medical schools require for admission one year of training in the history of science, especially, of course, in

the biological sciences. It is neither realistic nor desirable to expect all undergraduate colleges to teach medical history, but medicine as a part of the sciences would furnish a subject matter quite suitable for college instruction. With the present upsurge in the history of science as a discipline, such a requirement for premedical students could easily be met in the not too distant future. Preliminary training in the history of science would enhance medical student interest in medical history and would provide a background for more detailed and more meaningful studies in medical school.

Second, the medical faculty could provide genuine prestige for medical history. Medical schools emphasize the importance of student research. Research in medical history should be deemed just as acceptable for student effort as is investigation in biochemistry, and should count just as much toward fellowship awards, honors, and other student encouragements. Moreover, sometime during the four year course each student might be required to write a historical study, say, ten to fifteen pages in length, on any topic in any medical subject. Such a requirement would go far to inducing a historical attitude in the medical student, and would prove that the faculty is paying more than lip service to the importance of history and to its role in bridging the two cultures.

Charles E. Rosenberg

The problem we have been discussing has, in a way, been very well summarized by Dr. King, because it is quite obvious that in any particular medical school the policy decision has to be made first: how much time can one give to medical history. This should be based on whether one thinks it has some utility for the prospective physician who is being educated, or whether one thinks it valid simply in terms of its intrinsic intellectual interest.

A very strong case can be made for the latter, but I think anyone would concede this. No one, I presume, would contest the view that medical history has qualities of interest which make it worth study, like the history of philosophy or of any other field. The question is whether the total medical school population of one hundred or one hundred fifty incoming freshmen should all be exposed to a course in the history of medicine. I am not getting away from "what should be taught" because I think this is very intimately related to it. It seems to me that the only case for a compulsory course is one based on a belief that the physician should somehow have a broader feeling for the place

of medicine in society, a greater sensitivity to the alternatives that might exist. This is why I appreciated Dr. Rosen's paper particularly; the aims he listed point clearly in this direction.

This is a period when everyone complains about specialization, when—in any field but particularly in medical schools—meetings of curriculum committees dividing up the territory can be rather violent. At the same time intensive specialization inevitably pushes those caught up in it toward a narrower view of the role of medicine. The medical school professor, if he is to be promoted, will usually have to do research of an increasingly technical and circumscribed quality. At the same time, as Dr. Rosen has indicated, this is a period when medicine has problems obvious to anyone who can read the daily newspapers. I think a very strong case can be made for the need of medical students to get an external view of what they are doing in contrast to the constant pressure pushing them inward.

Remember that the total experience of medical school, internship, and residency is a strongly emotional as well as an intellectual one and that the students are imbued with an emotionally charged view of their task. In many cases this makes it more difficult for clinical and research scientists to see alternatives to well established social policies and practices.

This, it seems to me, is the most important justification for Dr. Rosen's kind of structural or organic approach to medical history: to teach the student—at least in some cases—that what has happened was not inevitable and necessary but a product of institutional historical change, that the past might very well have developed in some other way, and that it developed as it did for particular reasons at a particular time. This may sound rather primitive, but the point is that most people, when it comes to changing anything, do not think this way. I think most thoughtful people realize that we simply have to think of alternatives. We simply have to think of ways of bringing about change.

There is another purely pedagogical reason why Dr. Rosen's—let's call it structural—approach is a valuable one. In a hypothetical freshman class of one hundred medical students, this approach is much more likely to reach a common denominator of some sort than what one might call the history-of-science approach to the history of medicine (that is, how did Harvey get where he got, what were his problems, who was ahead of him, who was not ahead of him, and so on). This, it seems to me, is the major pragmatic justification for this kind of approach—the hope that it will have some effect on the medical population.

There is another point that I think was not really emphasized suf-

ficiently by Dr. Rosen, though I am sure he would agree with me. It is my feeling that a good history of medicine program has to be based on a permanent full-time appointment—preferably on a department. The only way you can have a real commitment to medical history is to have a person doing it who feels he is a medical historian. This may sound arbitrary, but I think it is important. In other words, he has to think, "this is my craft, this is what I am doing." His aspirations have to be formulated in terms of being a medical historian and his feelings of success or failure have to be evaluated on the basis of what other medical historians think of him, not on the basis of what his other colleagues in the medical school think.

There has to be an institutional context supporting the professor in which he has a certain kind of security and from which he can serve. The medical historian could ideally serve the medical school and the university as well in a number of different ways. If he has a recognized specialty and this is known, he will over the years be able to work not only with interested medical students who turn up, but with other faculty members. He may very well be able to advise the library. He will certainly work with people in history, philosophy, and art history. He has a function in the total university community which can be fulfilled only by a permanent full-time chairman or department. And it is my feeling that the optimum arrangement is to have more than one person, to have a department, call it social medicine or what you will, in which a medical historian works closely with either a sociologist or a general historian.

The reason for this leads me to another point I want to make, a rather pragmatic one. The specialized training we have today means that no one individual is likely to be able to do fully what Dr. Rosen would like him to do. If there are two or three people who are good enough, they cannot be spread around eighty-five medical schools. We may have to depend on a group of scholars working together in a small department if we are to fulfill some of the functions we have been discussing. Medical sociologists are becoming increasingly aware of the need to provide some sort of historical dimension. Yet their own interests and training are such that, on the whole, they do not dig it out. Intellectually they feel it admirable, but they are just not going to sit down in the library and open books to do it.

This brings me to a more specifically pedagogical point. In relation to Dr. Rosen's outline of what should be taught, I really feel more sympathetic with Dr. King's emphasis on a narrow focus. My experience has been that the case-study method conveys more. If you have sixteen hours to spend, it is better to spend eight of them on Greece and eight of them on mid-nineteenth century and forget about every-

thing in the middle. I think this will appeal to the best students, along with some provision for texts and discussion. I am not sure that a strict seminar method is the best for medical students. I am not sure it is very good for graduate students. It depends on the group. Informal discussion which can at some point be turned into a seminar seems to me a very good method, assuming that the right teacher is available.

The case-study method, I think, lends itself much more successfully to fulfilling Dr. Rosen's aims, which I agree with completely, than does a general lecture format. The more one can suggest the totality of any particular situation, the more the better student understands the historical process. For the good students what is challenging is the complexity of the relationship, the fact that things are not as simple as they might seem. Moreover, this allows one to discuss medicine in a rather broad sense—to show the place of intellectual, formal thought in relation to the actual function of the physician, and in relation to disease, ideas, popular views, economic demands, social pressures, and institutional arrangements.

The problem here is that our literature is in one sense so voluminous, in another so narrow. It simply does not lend itself to this kind of teaching. It is my feeling that in a sense Dr. Rosen is cheating by mentioning the Greeks as an example. Put it this way: if I had to teach this kind of course, I would feel that the literature was best for Greek medicine because people have tended to look at Greece as an organic society and have tried to study its philosophic, economic, and medical aspects in terms of their dependence upon society as a whole. For later periods much less of the literature is developed from this point of view. An effort to put forth all these views without adequate time would result in too many broad, sketchy generalizations. I find this unsatisfying, and I think the students do too. The bad ones get lost and the good ones feel that the instructor is just being superficial. The greater tragedy is losing the good ones.

In every medical school class there are three or four good students who might be interested from a strictly intellectual viewpoint in the history of medicine or others concerned with social policy who need to have their ideas or views broadened. The most important thing is developing a program which will stimulate and elaborate the interests of those who have the sensitivity, the empathy for this kind of problem. Obviously, you cannot make everyone a medical historian, you cannot make everyone sensitive to the problems in medical history, but the worst tragedy would be a program which dimmed the interests of those who might potentially have been concerned.

DISCUSSION

History for what?

Dr. Bates: It seems to me that a subtle problem underlies most of our discussion about what should be taught. This is whether we really want to teach history to students as they would be taught if they were getting a course from the history department, or whether we want to use history to teach them something else. The answer to that question brings with it the answers to many of the other issues that have come up.

For example, the case method may teach a student to have greater insight into the mental processes of scientific discovery, it may teach him philosophical ideas and approaches, but it may not teach him history, even though an historical example is used. If one is committed to teaching history, it is not easy to take small parts of it.

Perhaps there is no right answer to that question; perhaps in approaching the subject one needs merely to be conscious of which he intends to do and then the answers follow.

Dr. Greene: I really cannot see the distinction between teaching history and using the teaching of history for other purposes, for example, to give the medical student a sense of continuity and adaptability to social change. These are purposes in teaching any kind of history. I have taught a survey course in the history of science. It is taken by all kinds of people. I have various motives, some more ulterior than others. There are certain things I hope to do for science students, for history students, and for other students. My colleagues who are teaching political or economic history also have various purposes.

Essentially, one wants to hire a medical historian and then let him teach what he feels he has to say, giving the course whatever structure he chooses and finding his students where he can.

Dr. Bates: Dr. Greene's point is well taken, and I do not want to make a protracted defense of this distinction. It is quite true that historians have many motives, but operationally, when I hear people discussing what should be taught in the history of medicine, I sense differences in priorities, differences in emphasis. In the medical school, historical teaching is often viewed as only one way of teaching certain things that have to be taught.

Dr. Berry: Dr. Bates' question concerns medical education in general.

To take an analogy: in medical school one has a group studying biochemistry as an advanced science, and also a group exploring biochemistry as future physicians. The objectives are not precisely the same. Is this what Dr. Bates was reaching for? One can teach history as history, or history in terms of the forward motion of medicine. These are not identical. But, one has to teach biochemistry as biochemistry, whether one is teaching a medical student or a graduate student. Although one must strive for balance in every subject taught in the medical school, one should not teach a watered-down course. I suspect that this is true of history.

History for social perspective

Dr. Berry: One often sees an issue more clearly by looking into someone else's back yard. That is why I have been interested recently in what the theologians are trying to do with theological education. They have been greatly stimulated by the frequently voiced comment that God is dead.

What does this comment mean? To many theologians it means that the organized system of theological education has fallen behind social progress and social demand. If one accepts the thesis that any human institution is a reflection of social demand, then one can carry this over to the medical field and see that medicine's great pride, the accomplishments of this century in medical science, is not in any way, shape, or form comparable to medicine's progress or lack of progress in medical sociology.

Here resides the great difficulty: trying to bring new knowledge to bear promptly on the patient's problems. The organization of medical care has not kept pace. One must get medical students to understand how medicine has evolved in response to changing social demand.

As a medical dean, I have been interested in the students' queries. We are fortunate to have at the Harvard Medical School a body of students of whom more than a third were not science majors in college but majors in the humanities. The latter rank with our best students. They keep asking about the interaction of social forces.

If one begins with the current problems that the students are struggling with and wends one's way backwards, if one helps them realize that there is nothing sacrosanct about the way things happen to be at the moment, one may capture their interest. One can even influence the faculty this way. Let me remind you of Charles Eliot's famous comment, that the only thing more difficult to move than a cemetery is the curriculum. Fortunately, the faculty of medicine are beginning to realize that all is not well with medicine. The growing concern provides an opportunity to introduce a broader view—call it history or something else. The insight that comes from understanding historical development helps the faculty appreciate the social changes that are impinging on medicine today. This is exactly what is needed. The grass must be dry to permit a prairie fire. It seems to me that there is plenty of dry grass in the sociological aspects of medicine.

Even so, arousing interest in medical history is difficult. One of my chores at Harvard was to find the funds to keep the Medical School going—we raised about $60,000,000 for the faculty. In spite of the fact that a department of the history of medicine had top priority, adequate financing was not secured.

It is not particularly relevant how one defines the scope of medicine. All of us have a concept of what the medical profession is being asked to do by society. The demand changes with man's progress. It changes as the result of accumulating knowledge, it changes under the impact of interacting sociopolitical and economic forces.

One cannot really understand what medicine is facing today in this country and throughout the world without having some knowledge of the past. When one talks to doctors, to students, and to almost any group, the *status quo* is a

solid reality; what is seems to be necessary. All one has to do is look back a little to observe this is not true. The study of history helps us move forward intelligently.

History is an intellectual discipline. Of course it must be. But those who are concerned about how American medicine will meet the challenges that have come with large governmental support, with the new concept that health is a basic human right, cannot understand without some comprehension of how medicine arrived at where we are now. The reason I failed to raise money for the history of medicine is this: when you ask an average person for support, he says, "What difference does it make whether some recently discovered papyrus needs translating?" Thinking of history as an antiquarian pastime only has beclouded the need for understanding its relevance in the sense under consideration.

Dr. Hunter: If one looks objectively at the medical scene in the past decade or so, clearly one of the outstanding failures of medical educators has been in the social awareness of our product. As a medical educator one cannot crab about the position the AMA takes on this, that, or the other without looking back and seeing why we find ourselves so much at cross purposes with the products of our educational efforts. I think it comes right back to roost exactly where Dr. Berry put his finger, that we have not managed to establish for the medical student an awareness of social forces and their evolution, their inevitability, and their significance.

Dr. Duffy: A historian of medicine cannot give only historical perspective to the subject. He should do more than this; he should give an outside perspective, so medical students can see themselves in relation to the rest of society.

Whether a historian can do this is a rather complex problem, since history itself is exceedingly complex. Many historians by rigid selection are able to prove or disprove anything, and it is a very common practice among nonhistorians simply to cite the few historical facts that support their opinions and happily disregard all the rest. I am not so sure that people with little training in history—biologists and anatomists and so on—should be teaching this subject. Historians are as specialized as people in other areas, and I doubt that a medical historian as such is capable of giving this outside viewpoint.

A medical school would, I think, be better off getting a social historian or a historian of science who has had a fair amount of work in literature, social history, and government. Even the historians of science frequently are too specialized to give social perspective. There is a need to see a complete cross section of the whole society, so I would plead that we involve history departments and social historians in the teaching of the history of medicine.

Dr. Veith: I think the history of medicine has some important practical values. For example, we cannot possibly understand modern Japanese medicine unless we know what was the past history of medicine in Japan. And that is true also for all the medical systems in other countries, as well. I do not think we can understand the medical systems of foreign countries unless we know how they came about.

For scholarship

Dr. Hunter: I am unhappy about the general level of scholarly operation of our faculties and students. I think there is not sufficient respect for this approach to all fields of endeavor in which they may become active. I view the promotion of this attitude as very important in this age of narrowly specialized science, and I believe that it must somehow pervade the whole faculty.

How it is to be accomplished I do not know in detail, but the analogy with departments of preventive medicine is very strong. Where the body of knowledge encompassed under preventive medicine is, is anybody's guess. You can find as many diverse opinions about this as you can about medical history around this table. But there is a general agreement that you need to foster the preventive approach in all clinical work and that if you relegate it to a small group called "preventive medicine" and everyone else ignores it, you have not accomplished your purpose.

Similarly, attention to the psycho-social aspects of diseases cannot be relegated entirely to a department of psychiatry; if physicians in ophthalmology and medicine and surgery are not approaching their patients with this point of view, the cause is lost. I have seen the establishment of a division, let us say, of psychosomatic medicine backfire, because people dumped the problems on the specialist as his concern and not theirs.

To come back again, I am concerned about what I call the scholarly approach. The efforts in the history of medicine have a very powerful bearing on this, but I believe that everyone should be involved, to the extent that he is able. For example, I think that interlining historical background in an ordinary clinical session is of tremendous importance. Somehow I hope to persuade more faculty people to adopt this approach.

Dr. Stevenson: In the same way biochemistry may be introduced here, there, and everywhere, but it does not relieve you of the necessity of having a department of biochemistry.

Dr. Chapman: I want to pick up the word "scholarly" and say that over the past decade, having introduced a number of topics to many audiences by presenting at the outset a documented chronological sequence of sorts, I have been struck by the number of times that people come up and say, "Thank you for a scholarly presentation." Half the time at least this is a hostile comment. They usually mean that they have been bored, and that that portion, at least, of my presentation has been a waste of time.

On the other hand, it is hardly a waste of time in certain other contexts. Recently it fell my lot to deal with the heart disease, cancer, stroke legislation during its formative stages. This proposal, as you remember, came out in various forms and generated a lot of confusion and hostility, but I found to my amazement that when one called to the attention of audiences the fact that the concept of regionalization or categorization of health facilities had a considerable background in this country and proved it with documentation, this somehow tended to make them feel better and to disarm a lot of critics. It

began to dawn that this type of approach, whether you call it history or not, has a certain pragmatic value.

Recently in Dallas—and Dallas, by the way, is rather hostile to the whole idea of medical history in the medical school itself—several of us found ourselves in an argument with the board of managers of the hospital district. They wished to redefine what, under the law, is an indigent patient. Currently it is one who makes $3500 a year, and they wanted to lower it to $2500 a year. Their argument was that we have tended to become more and more liberal in our interpretation of the definition of an indigent patient, that we should stop this process, and that there was no longer a need for it. Something stirred in my memory. I had read somewhere that Dallas had a city hospital in 1872, so I invited a medical student to go to work with me on this topic. We went to the county records and the Dallas Historical Society. What we uncovered is something like political dynamite. It is unequivocal evidence that the community has retrogressed. Its definition of an indigent patient was $2500 in 1895. Furthermore, the east-west railroad came through Dallas in 1871. When the city hospital was built the next year, people west of Dallas three, four, even six hundred miles to El Paso heard about this free hospital, and they began loading their sick on eastbound trains. With no warning to Dallas these people were dumped on the city hospital. This created a crisis of sorts, but the city fathers solved it by making a very early city-county arrangement for the support of these patients rather than by refusing them as they do now.

What we found does not prove that one should not lower the definition to $2500 today, but it does disprove the contention that the trend down the years in Dallas has been towards more and more liberalization. It is quite the contrary. I offer this as a pragmatic justification for one type of historical approach.

Dr. Wangensteen: My own definition of history would be an invitation to learning. Students are always asking, what are the purposes of medical history. It is, of course, very difficult to give satisfying answers.

I was tremendously interested in what Dr. Berry had to tell us. I suppose he has the King of Swat, the Babe Ruth Home Run Record, in helping medical schools to get on. Remember, he said he had raised $60,000,000 to endow professorships but had failed to interest anyone in a professorship in medical history!

Thirty years ago I operated on a patient whose husband apparently was very grateful and said that some day he was going to reward me for this. About twenty years went by. I had forgotten all about it, and one day, my Mr. Smith did bring a visitor into my office. We sat and chatted a long while. I did not know what the purpose of the meeting was, but finally the visitor said, "Mr. Smith, why are we here?"

Mr. Smith said, "We are here to discuss your problem."

Said the visitor, "I have no problem."

Mr. Smith: "Yes, you have. You have."

Replied the visitor: "Well, Mr. Smith, what is my problem?"

Mr. Smith: "It is your money, sir. It is your money."

Late that very same afternoon, Mr. Smith telephoned and said he had gotten $100,000 from the visitor. Ten days later, the visitor called up and said, "What have you discovered?"

I think perhaps this is why Dean Berry had such great luck in raising money for molecular biology but found little interest in medical history!

I do believe that medical history has a relevant function in our curriculum. If I were young again, I would think seriously of medical history, but of an ingredient a little different from some of the things we have been discussing. I think the seminar discussion in which one talks about what one does not know, rather than lectures in which one talks about what one does know, is probably the best exercise in teaching.

Departments of medical history in my opinion should exist in every medical school. We need to bring medical historians, young scientists, librarians, and representatives of various biologic disciplines together to discuss the little known and the unknown. Such discussions could have a great catalytic effect and accelerate progress. If one could put some of the money available to other disciplines for research into this kind of structure, medical history could lend great impetus to medical research, new developments to learning and scholarship. The medical historian with a background of interest in biology will come, I believe, to play an important pivotal and catalytic role in energizing interdisciplinary attacks upon problems in which there are converging peninsulas of information.

For itself

Dr. Rosenberg: I think that in any university or medical school, institutional arrangements are very important.

You are saying our strategic position is this: we feel the medical student should have a broader view of society. In an effort to do this, and because we think it is intellectually interesting, we are going to support medical history. We are going to give this man an office and a secretary and we are not going to fire him. And then I think it is up to him to point the program any way that he feels necessary. This is the way things are normally done, this is the way you should operate.

Whether the function of medical history is to serve as a conscience for the medical school or is to sharpen the students' perception of how things operate will depend on the individual teacher's interest and how he interacts with people. At different universities, courses that go by the same name and have the same course description often bear no resemblance to each other. Teaching is important because the teacher provides something. Otherwise one could just provide a big library and give the students keys. This does not work.

Dr. Bodemer: Much of our discussion has revolved about the use of medical history as a means of imparting social awareness: of somehow developing a

soul in new medical students or providing therapy for what we consider amiss in contemporary medical education. I agree that there are many and varied insufficiencies in medical education. I think that medical history has a great role to play in remedying this, and I heartily concur in the approach indicated by Dr. Rosen. I am concerned, however, lest medical history be interpreted as a device ensuring remedy of real and imagined failures in premedical or medical education. Without denying the value of medical history in this role, I would decry the wisdom of regarding this as its sole purpose in medical schools. Medical history deserves an identity and dignity in its own right as an academic discipline and as a respectable form of medical scholarship. It would, in my opinion, be very dangerous for medical history to become primarily a form of therapy for medical education at the cost of sacrificing scholarship and the ideals of a true academic discipline, merely to function as a kind of curricular pill.

I would like also to emphasize the need for an attitude of flexibility toward programs in medical history, because many factors may affect the situation in any given school. One factor is the person who is available to teach the subject, the nature of his interests and his areas of competence. Another factor is the character of the various departments within the medical school. In some schools, the departments of preventive medicine, psychiatry, or physical medicine and rehabilitation have a strong orientation toward the social aspects of medicine. The context of medical history courses might be modified significantly according to the programs existing in such departments. Furthermore, the nature of the medical student body varies considerably. Some medical schools are prone to reject students who have majored in subjects other than science, while other schools actively encourage premedical students to major in other fields. All of these factors, faculty, existing programs, and student body, are even further varied when the medical school is an integral part of a university complex.

Dr. Greene: I want to enter a caveat here against regarding the medical historian as the humanist with a capital "H" who will take care of everything that is not taken care of in technical medical training, that is, the history and philosophy of medicine, general humanistic culture, and so forth. This is a very common attitude, and not only in medical schools. I have experienced it at the University of Kansas. My own field is the history of science, but I continually find scientists assuming that I am a philosopher of science. They know or have heard that in my courses we talk about science in terms of general intellectual history. Since I talk about things that they do not discuss much, they conceive of me as taking care of everything they leave out.

The medical historian should fight strenuously against being given this role and should make it perfectly clear what his competence is and how he conceives his own role. This is related to what Dr. Hunter said, that medical history should impart to the students a respect for the scholarly approach to things in general. He can get this from the medical historian, but he is certainly not going to get it if he thinks of the medical historian as somebody who covers everything.

Dr. Holmes: The discussion has given rise to an interesting parallel with the debate since the war on the rationale behind government support of science in general and particularly the dichotomy between pure and applied science. The justification of pure science in Dr. Vannevar Bush's original report to the President recommending national support of research is clearly in terms of the eventual benefits to society. It said also, however, that the scientist doing pure science should not be concerned with such benefits, that he should be looking at problems for their own intellectual merit.

The situation is similar here. There are hoped-for benefits to the medical students but these ought to be kept free of any methodological connections with what the historian of medicine does. If such benefits flow, they should just occur. The historian of medicine should not be responsible to see that they occur, any more than the pure scientist has the responsibility to be always worried about whether his research will give economic or other benefits.

In pure and applied sciences, people are always able to point to examples in which something that seemed to have no practical use later had unexpected great benefits. Nevertheless, misunderstandings and difficulties can arise. In the case of medical history, impatience and difficulties are perhaps more likely to be involved, because one cannot point to tangible examples demonstrating its effects on the students. If one introduces courses in the history of medicine and asks ten years from now whether they did anything to resolve the shortcomings that Dr. Hunter pointed to, it will not be easy to give a positive answer. We have to be careful to protect the historian of medicine and what he is doing from a great many direct pressures to contribute to all of the values that have been set forth here.

Dr. Blake: It is essential that there be some social purpose in medical history if it is to be supported by public or private university funds. At the same time, I think a distinction needs to be made between the social purpose of medical history, which justifies the university's support, and what the medical historian does. If we place too much emphasis on the social purpose, we are likely to get in trouble, because it may take ten, twenty, or thirty years before we can prove any benefits, if then. If we can get the idea across that medical history is a valid academic and intellectual pursuit which should be supported for its own sake, we may accomplish more for the field in the long run than by trying to claim too much for its purpose, its utility, and its value.

Dr. Stevenson: I think this is a valid point. Nevertheless, Dr. Chapman has produced some quick results from historical research.

Dr. Blake: Dr. Chapman's illustration represents one kind of value in medical history. He was faced with a specific problem, he looked at its history, and he found some information that turned out to be very useful in solving that specific problem. But you are not going to teach medical history to medical students this way. You do not get a group of students in front of you and say, "Medicine is faced with these five problems, here is the history of each, and now we no longer have these problems." In the history of medicine, just as in any history, what you teach is not the answers to specific problems but a way of looking at things.

The core content

Dr. Bowers: I think the chairman of the average medical school curriculum committee sitting here this morning would go away very confused. My question is, is there a central body of knowledge that one needs to communicate in the history of medicine to medical students, interns, residents, faculty members? Is there a central body of knowledge from which one can branch off in a variety of directions?

Dr. Rosen: The answer is yes, and I have tried to give you a very succinct formula. If one is going to teach the history of medicine, the central body of knowledge is the population, the health problems of the population, the people who have to deal with those health problems, and how they have dealt with them at various times. If you want a very simplified, perhaps oversimplified summary, that is it.

One point should be stated specifically. The kind of approach I have suggested does not include what apparently gave Dr. King such a distaste for history originally. You do not bring in all the details, you simply use details to illustrate generalizations. This is the way you get around the question of limited time. The point is to create for the student a pattern that he can understand, to show him how the pattern changes and why, and to use illustrative details which make some sense.

Secondly, if you are going to have a course that is taken seriously by faculty and students, the student has to do some work. Would a student in anatomy come into class and expect the teacher to do the work for him? Obviously not. Why should that be the case in the history of medicine?

Thirdly, Dr. Rosenberg suggested that you can present a comprehensive view for the Greeks but not, let us say, for the nineteenth century. Frankly, I think this is completely wrong. I could show Dr. Rosenberg and anyone else how it can be done for any period in history. It means that the teacher has to do homework, too, if he wants to be really up to snuff. It is not easy. It is a lot easier to concentrate on a small subject, particularly if you happen to be interested in it. But what happens if the students are not interested in your subject?

In the long run it comes down to one basic question: do you think medical history is important enough to teach, and if so, then what do you want to teach it for? If it is simply to turn out a doctor with a special bouquet in his lapel that says "Medical History," then you might take a smaller approach. If you want something else, then I think you might as well accept at least as a goal the comprehensive structural view.

Dr. Rosenberg: I would like to confirm what Dr. Rosen has said. I think there is a comprehensive structural view of medicine. You start with sick people. They go to someone because they want to be better. And the ramifications of this basic social problem are medicine. This may be so schematic as to be meaningless, but it should be kept in mind. Even when it comes to solving a particular historical question, the recollection of this truism will often bring things to mind.

I think the real problem of medical history and its acceptance by medical school faculties is that it does not seem real. There is a kind of negative deviant image of medical history as book collecting or as learning who did the first pylorectomy. When I talk to people—and I am outside of medicine so they are fairly frank—this is the kind of thinking I get. What good is genteel antiquarianism?

By having Dr. Rosen's structural, comprehensive viewpoint, you keep a certain proportion. Even if you are interested in philosophical problems of the kind that concern Dr. King, you can improve your methods of research and your results by keeping this framework in the back of your mind—by being aware that institutional arrangements have certain effects in promoting or slowing down ideas, that the social status of a physician can push him towards the adoption of one or another idea in certain situations. You cannot understand the formal ideas unless you understand their place in the total structure of medicine. For example, institutional appointments play a role in the development of specialism. Once you start appointing professors of urology or ophthalmology, this has important consequences for the work they are able to do and the ideas they are able to have. This is a simple example, but it is the kind of point that Dr. Rosen's approach would tend to call to mind.

Dr. Greene: Whether a general course with a structural approach, such as Dr. Rosen describes, or a course more limited chronologically but in greater depth is going to do the student more good cannot be decided *a priori*. If a person with Dr. Rosen's interest and competence can handle a course his way, I think it would be very exciting and accomplish a great deal. But another person might want to do things in a much different way, and his could be an equally good course.

With respect to survey courses, there is this problem. When I first went to the University of Kansas, I taught a general survey of the history of science because I was the only historian of science there. Obviously I talked about many things that I was not intimately familiar with, and this had its drawbacks. Now that we have more people there, we have divided the course up, and the medical historian comes in and helps. In some ways it is a better course because people are talking about things they are more familiar with, but in some ways it is not as good because it is much harder to give it unity.

Dr. Hunter: As an ex-dean of a medical school, I have for years fought off little groups who have irreducible bodies of information about this, that, or the other which simply have to be stuffed into the medical student. It is not an approach to curriculum design or the function of medical schools. The people at Western Reserve tried nobly to come up with an irreducible minimum, but if you accepted all their minima, you ended up with eight years of a steady flow of high pressured juice going by so fast the students could not even get their mouths in the stream. So this is out. I do not believe that a required body of material for all students is desirable.

I am much more interested myself in capturing the interest of students in whatever way is possible. I am inclined to believe that unless there is a firm base somewhere in the medical school for people with a career dedicated to

medical history, other efforts are likely to be far short of satisfactory, and, therefore, one has to have content. But I would prefer to set up something that by virtue of its own force of attraction could compete successfully for the interest of a substantial number of students, rather than try to design a course that would cover the material that we think the students should be aware of. It is far more important to help students to learn than to teach them this, that, or the other.

Dr. King: I cannot agree with Dr. Rosen regarding the "existence" of a central core. Dr. Rosen has been trained in sociology, social sciences, public health. My own training was in philosophy and the history of ideas. Dr. Rosen has been on the firing line of medicine, concerned with practical public health problems. I have dealt with a world of books in which the practical problems do not directly concern me. As a result of my background my personal feeling is that the essence of medical history represents a body of scholarship which has no practical utility. I feel that the history of medicine should be an intellectual approach to the ideas that have animated physicians. Many of these ideas, of course, are socially directed. I have the greatest sympathy with Dr. Duffy and with Dr. Rosen regarding social problems. I believe, however, if I were to direct a department of medical history it would be oriented toward the intellectual problems that have intrigued physicians.

To say that there is a necessary hard core to a curriculum seems unacceptable because if there were a core, it would depend on who was picking it out. Dr. Rosen picks out one set of thoughts for a hard core, and I pick out another. I am quite sure that everyone around this table would pick out something different. Perhaps the essence of the democratic way is that there is competition, and the core which succeeds is probably the one which is most effective.

Dr. Rosen: May I ask, Dr. King, where do your ideas come from?

Dr. King: Obviously from a wide variety of sources.

Dr. Rosen: Are they simply absorbed by osmosis?

Dr. King: In part.

Dr. Rosen: Are they not transmitted? Are not ideas taught by one to another, and books written and printed?

Dr. King: Yes.

Dr. Rosen: Are there not channels of communications?

Dr. King: Yes.

Dr. Rosen: You are getting into the social aspect already.

Dr. Duffy: You two are illustrating the point that historians differ greatly among themselves. The only real synthesis may be chronology, or the framework on which history hangs, but from this one can deal with the history of ideas, or of social problems, or of economics. Each historian tends to view

things differently but that does not mean that each in his own way may not be very effective.

Dr. Rosen: There is more to it than that. A historian can limit what he wants to deal with as long as he recognizes that there is more to it. The ideas are there, but they exist within the framework that Dr. King does not want to recognize as being relevant to what interests him. Without that framework, his ideas would not be there.

Dr. King: One objection that I had to Dr. Rosen's concept of a medical history curriculum is that it is so comprehensive that it leaves out practically nothing. There is hardly anything which could not be fitted into one or the other of his categories.

I thought I would beat the drums for the concept of the philosophy of medicine, but I realize that if you try to define philosophy, nothing is really left out there either. Perhaps Dr. Rosen and I are somewhat closer together than we might have sounded.

I would simply like to make a plea for history as an invitation to learning, as philosophy in its broadest sense. The philosophy and the history of medicine are extremely close together.

Dr. Rosen: Yes, I agree.

Dr. Chapman: I want to say one thing about "core content"—a term which frightens me, by the way. If you were to talk to chairmen of curriculum committees, they might be worried about what medical history is all about; they will not be worried about physiology. But if we had around this table physiologists talking about the core content of physiology, they would be extraordinarily worried and confused, and they would differ more among themselves than we do here. We ought to note that medical history is fully justified as a discipline and that perhaps we do harm by being too rigid in the definition.

Dr. King: The concept of "what" is supposed to be the subject of this morning's discussion. I am reminded that I spent several years as an anatomist and I was always puzzled by the problem, what is anatomy? I found out a suitable answer: anatomy is what anatomists are doing, which involves neurology, surgery, virology, physiology, study of structure, history, genetics, and many other areas. Similarly medical history can best be defined as what medical historians are doing. Who is the anatomist? He is the person who belongs to the association of anatomists or to a faculty of anatomists. By definition, then, he is an anatomist, so that what he is doing is anatomy. Then you can ask, who is the medical historian? Well, obviously, he is the one giving the course in medical history or who belongs to the American Association for the History of Medicine, and what he teaches is medical history.

I think that Dr. Rosenberg has put his finger on a very important point, that what many medical schools want from a course in medical history is a conscience. It does not make too much differenne what the actual content is so long as somebody on the faculty is getting away from a rigorously "scientific" approach to the study of medicine. There is a widespread feeling in

faculties that somebody who is interested in medical history can talk about philosophy, sociology, literature, and the humanistic aspects of medicine, and that it is important to get this viewpoint across to the medical students rather than specific knowledge about a particular period or person.

Dr. Temkin: I cannot help feeling, when I listen to this particular debate, that there is a question which goes beyond the one Dr. King raised.

What we mean by the history of medicine depends largely on what we mean by medicine, and here I discern basic differences. Whether the history of medicine is useful or not will depend on whether you visualize medicine as primarily the action of the practitioner at the bedside or as the complex of what we now unfortunately call the health sciences. That largely also defines what we mean as a basic content of the history of medicine. I would like to think that our scruples and our uncertainties about what the history of medicine may be are creative, and are a positive reflection of how we think about medicine. I do not mean we should define it here. We have trouble enough without that, but I would simply propose that there is behind our difficulty a new definition of medicine. If that is true, we should welcome, to a certain extent, the lack of clarity on what is the history of medicine. Let us do some groping with it.

Dr. Stevenson: What you teach, Dr. Rosen told us, is what you want the students to remember—a sort of *1066* approach. If I am not mistaken, what he wanted the students to remember was how you go about it and the sort of thing you can get from it rather than a core content of specific substantive information.

Dr. Rosen: Specifically, a point of view. I do not care if they go away without the specific dates, names, and so on. They can always look them up in a book. I do that, why shouldn't they?

Dr. Greene: I think it should be stressed that there is not just *a* point of view. Suppose, for example, you are going to talk about the origins of science. If you take the Marxist approach that science is anything that contributes to man's mastery of his environment, you then see the whole history of technology in the ancient Middle East as a part of the history of science, and this is where you start. If you take Sarton's definition of science as being born purely of an intellectual effort to understand things, the origin of science looks quite different. There is no way of getting consensus as to what the essence of science is, any more than there is for medicine, and therefore it is difficult to find consensus as to what should be the core content of a survey course in the history of science.

The case is similar with respect to the question of practical applications. Ever since Sarton's day the history of science has been represented as building a bridge between the two cultures. But many historians of science argue against that. We have a discipline in our own right, they say. Why all these ulterior purposes? Though it may serve bridge-building purposes, they are tired of hearing about them. I do not happen to be one of this group, but

certainly the starting point is an interest in the subject for its own sake; and I do not expect consensus on the intrinsic nature of the subject.

Dr. Rosen: When I said a point of view, it did not have to be my point of view.

Dr. Greene: But you seem to suggest that there is such a point of view.

Dr. Rosen: There is an all-encompassing point of view and there are partial points of view. For example, consider the historian of science who sees it only as an intellectual discipline. When Sarton started writing his history of science, he began to jam all kinds of things into it. If you will look through his books, you will find he has included a lot of grabbag stuff which simply does not jell with the rest of it, but which he felt ought to be there. There does not seem to be any rhyme or reason to it really when you try to examine it. From my point of view there are partial approaches and total approaches.

I could not agree with you more that one has to have an intrinsic interest; otherwise one would not bother. Some of us who began to work in the field long before there were grants or any kind of financial support obviously had an interest in it, or we would not have engaged in it. So that is not a question. It has almost to be taken for granted.

The other question is what point of view do you wish to present to the students and for what reason. This goes back to the question Dr. Temkin emphasized—what is your concept of medicine?

History as a requirement

Dr. Greene: The question arises as to whether some course in medical history should be required. It seems to me we should keep in mind the various kinds of requirements that can be made. You can have a survey course in medical history which is required of everybody; or you can require that the medical student have some course in medical history or that he have some course either in medical history or the history of science; or that he have so many hours—and so forth.

My own feeling is that from the standpoint of both the teacher and the student, if there is going to be a requirement—and I am not entirely clear about this, certainly not for medical schools—it should be flexible.

Dr. Bates: With reference to this issue of a required course we must not forget that the university, if it wants something from medical history, must also be willing to give something to it. If the university expects medical history to contribute to the solution of some of the problems that Dr. Berry and Dr. Hunter have raised, then it must also expect to make sacrifices and contributions.

It seems to me that the word *required* is the administrative definition of what the faculty sees as being necessary for a medical education. Medical history is not of self-evident value to the student, and this might be a reason for making

it required. The student who assumes that medical history is of no value to him will never go if it is elective. Yet the medical student does not know everything that will be of value to him or what will catch his fancy once he is exposed to it. Besides, if you want to have medical history, or if you want to have a medical historian, I think you owe it to him to give him the opportunity to be exposed to students.

Dr. Rosen: It has been my experience over a period of approximately sixteen years as a teacher in the field of public health that students do not always know what they are going to use once they get out of school. If we teach them about health education, or medical care organization, some of them will say, what do we need this for. I am going to be an epidemiologist, or I am going to be a veterinarian. Often enough, when they get out, they encounter situations where the material is of positive value. They come back frequently and say how happy they are that they had this kind of teaching.

Medical students are basically no different from other kinds of students. They do not always know what they are going to encounter when they get out, or what they will need when they meet some specific problem. Flexibility is necessary but not at the sacrifice of basic objectives. In other words, a medical school is there to see that the students get a certain kind of education so that they will be able to fulfill whatever objectives they may have as members of society and as members of a profession, trained to perform certain functions. It is my conviction that in achieving these aims medical history can play a part. If it is organized around the objectives rather than questions of required or nonrequired courses, this brings us closer to the essence of the matter.

But I do think that students frequently do not really know what they will have to use and that therefore the requirement is a way of exposing more students to the history of medicine.

Dr. Berry: Although I believe it is important in our time of rapid social change for all physicians to gain some comprehension at least of what these changing social forces mean, I do not agree with the view that study in this area ought to be made a premedical requirement. About twenty years ago the medical schools abolished a host of premedical requirements that almost completely determined what a student had to do in college if he wanted to enter medical school. The pendulum had swung too far; there were far too many requirements. Many kinds of people are needed in medicine, they will serve in society in a great variety of ways—in many more ways than in the past. Thus, too many requirements become restrictive.

Dr. Cassedy: I would like to ask Dr. Rosen whether the basic medical history courses in the German medical schools are compulsory or elective. I ask in light of the comment that medical history should be compulsory only if some basic social purpose is to be served and in light of the comments on the failures of medical schools.

If I am not mistaken, medical history was deliberately placed in the curricula of German medical schools after World War II because of a reaction

to the antisocial directions taken by Germany and German medicine in the thirties. Some observers at least have made the point that they felt the history of medicine would have a direct utilitarian purpose there in broadening the physician.

Dr. Rosen: With regard to your question about World War II, I think you are aware that medical history was being taught in practically every university in Germany before World War II and apparently had no effect on the medical students at that time.

With regard to the compulsory nature, Dr. Temkin would perhaps be better qualified to comment.

Dr. Temkin: Medical history was made compulsory in all of the German medical schools some time after World War II, possibly for a variety of reasons. I had not thought of your argument, but it may have played a role. One of the arguments I know was that the task given to medical history should be that of introducing the freshman medical student to medicine. Whether this is a valid reason for us I do not know, because the situation of the German medical student is different from ours. He comes from a variety of schools, some of which have very little science altogether, and he enters medical school without premedical preparation or any real knowledge of what medicine is about. It makes good sense in Germany to have somebody try to explain to such a student what medicine is, and this task apparently has fallen upon the medical historians. I was told by them that this is now a well established part of what they have to do.

I may, perhaps, give an anecdotal experience my teacher had. In Germany he offered a course intended as an introduction to medicine. It was enthusiastically received by the students at the University of Leipzig. He made a book of it, and the German title was *Einführung in die Medizin*. It was a great success in Germany. This book was translated in the United States but the title "Introduction to Medicine" did not appeal to the publisher; he preferred the title *Man and Medicine*. The book was a straight translation, but it did not have the appeal in this country that it had in Germany—whether because of the change in title or the difference in the situation or attitude of the American medical student is another question I would not like to have to answer.

Dr. Bowers: There is a chair in the history of medicine in every German medical school.

Dr. Temkin: It is required. Lest we get too enthusiastic about what this means, I could perhaps comment in the form of an anecdote. A few years ago, in the doctors' dining room, a group of physiologists who knew me invited me to have lunch with them. There was also a German visitor who did not know who I was, but for one reason or another, my colleagues started talking about medical history. Somebody turned to the German and said, it is required in the German medical schools, is it not? Referring to his own experience, he confirmed that it was, but added that nobody went. What is required and what the students do may be two different things.

Dr. Stevenson: I have served as chairman of more than one meeting of impassioned professors who felt that it was necessary to require incoming medical students to have more physics, more chemistry, a college course in psychology, a college course in genetics, and what-have-you, and my conviction of the importance of the history of science and the history of medicine does not extend to acceptance of the suggestion that this should be made a medical school admission requirement. This would be a step toward eight years and I would be opposed on any ground.

During the year that Dr. Rosen was visiting professor of the history of medicine at Yale, I sat in on a number of his classes, and I can testify that he was very successful indeed in teaching, for example, the background of Greek society as a preparation for talking about Greek medicine. I think this can be done, to a limited extent certainly, but it can be done, And to require that one's audience should be fully prepared for discussion of Aristotle and Hippocrates seems to me to be hopeless. It reminds me of the ideal curriculum, defined as one in which all of the courses are deferred until the final year, when the students are ready for them.

Dr. Long: If I detect a consensus around the table, it is that the course in the history of medicine is desirable, and, secondly, that it should be required rather than elective. This is an important point to decide because it seems to me to determine how and what should be taught. I would like to point out that the idea of a required course is about 180 degrees out of phase with the general forward thinking in medical education. The trend is toward providing more and more elective time. Fifty per cent of our courses are of this type. As a consequence very much more attention has been given to the required courses, and during the formation of our new curriculum we have had to resist pressures as heavy and as eloquently made as those around this table for legal and forensic medicine, criminology, medical economics, computer programming, medical ethics, marriage counselling, and some others. In the atmosphere in which I am sitting at home, a required course in the history of medicine would take the bottom of the list of priorities.

Dr. Chapman: I am not sure that the consensus is for a required course. I doubt that it is.

WHO SHOULD TEACH THE HISTORY OF MEDICINE?

Owsei Temkin

A simple question deserves a simple answer. "Who should teach the history of medicine? A good teacher who knows the subject." Actually, of course, question and answer are equally complex. They do not say who should be taught, what the teaching is to mean, or whether there should be one or many teachers.

There is no reason why medical history should not be taught to all those who are interested: students from elementary schools through colleges, graduate schools, and beyond. Even the general public need not be excluded. But I take it that my assignment refers primarily to teaching in medical institutions. I say medical institutions rather than schools of medicine, because I wish to avoid any further limitations caused by the different character of medical school, hospital, and school of public health.

Insofar as teaching in medical institutions is, or should be, on a graduate level, I look upon the teacher of medical history as a university professor. This has certain consequences for our definition of teaching. The teaching activity of the professor must include research. The academic teacher of any historical subject must study primary sources and the secondary literature to give his students his own interpretation, even if his results happen to coincide with the findings of scholars before him and do not permit of publication. Without such research, he is a carrier of others' opinions or a teller of tales rather than a professor. Although in the following I shall restrict myself to teaching in the lecture room, I shall not hesitate to mention research.

In asking who should teach, we must not look for an answer in the singular. It is in my opinion desirable that many persons teach the history of medicine, even in the same medical institution. In particular, the technical history of the various disciplines during recent decades had better be taught by the instructors of surgery, medicine, pharmacology, and so on. In all probability, they will know this part of the subject bet-

ter than the historian, be he medically trained or not, and they can also give the student a feeling for the organic connection of past and present medical activities.

Misgivings will arise, however, when teaching in the various classrooms of the medical institutions by historically untrained persons is to be the exclusive mode of historical instruction. When William Osler propagated the method named after him, conditions in the humanistic education of physicians, as well as the demands on historical comprehension, were different from what they are now. History was more strongly oriented toward the humanistic tradition of the Western world, more physicians received a well-rounded, though limited, humanistic education than now, and medicine was still owned by doctors. In the face of greater complexities, champions of the Oslerian method today tend to lack concern for the content of what goes under the name of medical history. They concentrate on the stimulating effect on the student and on the so-called cultural enrichment. I do not deny that a picture of Hippocrates as the greatest clinician of all times, endowed with all the attributes which we value in a clinician, may create greater enthusiasm than a sober account which admits our ignorance of his activities and genuine writings. But if enthusiasm and a certain veneer that goes with having heard ancient names and having fingered some old books are the only goal, the name of history of medicine should not be fastened to such activities. The foremost obligation of an academic institution is toward truth. If the institution is not prepared to meet this responsibility regarding the history of medicine, it had better avoid mentioning it as a subject offered to students, or leave it to medicohistorical clubs. The latter can fulfill a useful function without claiming to teach.

Medical training and historical interests that remain undeveloped do not make teachers of medical history. Conversely, lack of medical training does not necessarily disqualify a man who comes from biology, the humanities, or the social sciences. To insist that *only* doctors of medicine ought to teach in medical institutions would be unduly restrictive. Such a view rests on too limited a notion of medicine, which has at least three major aspects: the sciences of health and disease, the healing of sick people, and the social task of protecting and improving the health of mankind. The neglect of any one of these aspects impairs the whole, and this is equally true of the teaching of medical history. Much in the basic sciences can be well elucidated by the historian of biology, provided that he has knowledge of human biology. A classicist, a Sinologist, a Sanskrit scholar may all teach the history of medicine within their own fields better than a physician who is not versed in the language and culture of these different civilizations. A general historian may impart a better understanding of the social background of medicine.

I hope that we shall agree that medical history could and, if possible, should be taught by many. I would like to envisage an ideal department of the history of medicine as having on its staff teachers from many disciplines. But since we are as yet far from having such departments, it might be suggested that the teaching should be done by a group from various departments of the university. Let the professor of classics give lectures on ancient medicine, let the Renaissance scholar cover medicine in the sixteenth century, let the biologist trace the history of the cell theory, of evolution, and of genetics, have the sociologist speak on the social functions of medicine and on the social determination of medical institutions and medical practice, invite the surgeon to discuss the modern history of surgery and the psychiatrist that of psychiatry, and so on in greater or smaller detail. Such a course could be stimulating, provided that all the participants know the history of medicine in their spheres, that some guidance is provided, and that cohesion is maintained throughout the whole. If the classicist has seriously studied Hippocrates, Celsus, and Galen; if the Renaissance scholar has read Vesalius, Fracastoro, Paracelsus, and Harvey; if the biologist knows Bichat, Rokitansky, and Virchow; and if the surgeon, the physiologist, the internist, and the psychiatrist have overcome the pitfalls which we discussed before; then indeed we shall already have come a far way toward the ideal department. Otherwise we shall hardly have a satisfactory course.

A good deal of specialization in medical texts is needed, together with the stimulus of medical problems and of the historical perspective provided by comparison with the medical systems of other epochs. To some degree at least, the question of who should teach the history of medicine to classicists, historians, sociologists, and biologists is no less meaningful than the question of who should teach the history of medicine to medical men. I mention the teaching of other than medical men in passing only. But in passing we should also remind ourselves that the history of medicine comprises all that is historical in medicine, as well as all that is medical in history.

Medical history, then, could and should be taught by many, provided they have a knowledge of the discipline in their own sphere at least. But should the teaching be left to many without anyone representing the discipline itself? To answer this question in the affirmative is to deny to medical history the character of a discipline altogether. It is a narrow view of teaching that finds it only in the classroom. Teaching on a much wider scale is done by academic research, by lectures, and by publications, which reach beyond the walls of a particular institution. But, to remain within the limits of our assignment, even teaching within the walls leans on textbooks; it needs coordination and consultation; in short,

it needs persons who represent the discipline as such. And last but not least, in many institutions the teaching of the subject will in the main have to be done by one man: the professor of the history of medicine. His task as a teacher seems clear: he has to instruct undergraduate and graduate students in the medical institution, as well as in other parts of the university if so desired; he must be available for seminars and lectures intended for the house staff or members of various departments; and he must give direction to courses offered by a group of lecturers. Sooner or later he should also train others who wish to become historians of medicine. What I am describing here is the full-time historian of medicine. Where should we look for him, and how should he be prepared for his task?

I do not think that a full-time historian of medicine *must* possess the degree of doctor of medicine. Yet I believe that he must know something of medicine. Even less do I think that a historian of medicine, if he graduated from a medical school, must also possess the degree of doctor of philosophy in any of the historical disciplines. Yet I believe that he must be able to use modern historical methods and such linguistic tools as are needed to follow developments in the history of medicine as a whole and to do research in his special field. Knowledge of medicine and of its history in their main aspects, familiarity with historical methods, and willingness to use them in research—these I consider the desiderata for a professor of the history of medicine.

Within these premises there is still room for a diversity of approaches. We may prefer to select medical doctors, and the question will be how to impart the necessary historical training to them. Or, we may choose historians and then ask ourselves how much of medicine they could and should be taught. Or we may look for college graduates and accept them as graduate students in the history of medicine. There may be other possibilities, but I shall limit myself to the above three.

If I were asked which of the three will make the best teacher of medical history, I could only confess my ignorance. For what counts in the end is the man's ability to live up to his task. This cannot be judged in advance, and we lack sufficient experience to point to statistical results. The history of medicine as a profession, in this country at least, is still in a developmental and empirical state, and I do hope that we shall not be hasty in codifying it and thereby fossilizing it prematurely. Anticipating, then, that others will proceed differently, we must yet abide by our own opinions, though most of us will hesitate to formulate binding iron rules.

Personally, I believe that the most promising way is to take young physicians, i.e., doctors of medicine, preferably with at least one year of internship, and give them the necessary historical and allied training.

My opinion is shaped by the belief that it is easier to teach history to doctors than to teach medicine to historians. If it were only a matter of teaching basic sciences and public health, this would not be so difficult. But I do not know where and how the historian or the biologist or anybody else will obtain some intimate acquaintance with medicine as a whole. If we look for teachers of the history of anatomy and physiology, one year may suffice to turn the qualified historian of biology into a historian of human biology. If we want teachers of the history of public health, social historians will master the subject relatively quickly. But if we want historians of medicine, we cannot dispense with a more than textbook acquaintance with what physicians know and do. Now it may be objected that it is not necessary to have delivered twenty babies to become a medical historian. Since I did not have to deliver quite that many, I am willing to compromise on a smaller number. But I would like to add that neither is it necessary for a psychiatrist to have delivered twenty babies. What is important is the exposure to clinical experience, and one year of internship is little enough, considering that its impressions have to last a lifetime.

In my own institution, I have hesitated to accept college graduates with no exposure to medicine as candidates for a Ph.D. degree in the history of medicine. I have been guided chiefly by two considerations. First, I have doubted my ability to teach the history of medicine adequately to persons who knew neither human biology nor the manifestations of disease nor the diagnostic and therapeutic way of thinking. To have accepted such students and to have then insisted on their taking courses in anatomy and physiology would have given them a one-sided orientation, especially dangerous for medical historians who have to deal with periods that showed little science in the modern sense. Second, it has seemed to me that to a nonmedical man the history of science offers greater professional possibilities than the history of medicine. I have therefore suggested that they register as graduate students in the history of science and then take as many courses in our Institute as they like. There is no reason why a historian of science, or anybody else, may not eventually grow into a medical historian if he has proved himself by his ability.

Where priority is given to medical graduates in the selection of prospective professional teachers, there is all the more need for seeing to it that their historical training rests on as broad a basis as possible. An isolated training in the technical, professional, and institutional history of medicine will not produce teachers who can see their subject broadly within the network of what we call cultural, intellectual, and social relations. This means that courses in the history of science, where available, should be made mandatory, and so should other courses in the humani-

ties and social sciences. Which exactly they should be can be left to individual interests and needs. As to foreign languages, they present a difficult problem for which I do not know an easy solution. Too much work in the history of medicine is directed by the language barrier. I do not mean only that the students will choose areas and periods where the medical literature is predominantly written in the language (or languages) they know. What is worse is the temptation to neglect contemporary events elsewhere. This is particularly true in the study of American medicine. A student of this field who avoids French and German literature is in great danger of going astray. How can he see the genuine contributions of this country if he cannot distinguish between what was accepted from abroad and what was done to it or invented at home? And everyone should have at least a smattering of Latin, if for no other reason than to understand the titles of the many books that have not been translated into the vernacular and to find his way through medical terminology.

However large a department of the history of medicine may be, it will not be large enough to offer all the necessary teaching in the humanities and social sciences. The student will have to take courses in the faculty of arts and sciences, and this, I think, is as it should be. Not only will he thus be exposed to professors and students who are not medical historians (and this is highly desirable); his mere presence *in partibus infidelium* may arouse a curiosity in others about the nature of medical history and thus help to lower the interdisciplinary barriers. I doubt whether an aggregate, a mere coming together, of professors from different departments will do it. What we need is more academic freedom to *study* in all parts of the university. Mutual interests in research and the mingling of students are more likely to work toward this aim than symposia, forced integration, and an overreliance on interdepartmental committees, unless the latter are in response to active student request. It goes without saying that a department of the history of medicine should welcome students from other disciplines.

It is hardly necessary to dwell in detail upon the teaching of medical history proper. This must to some extent depend on the organization of the department. In a subject as fluctuating as ours, it is important to pay attention to individual needs, and this can best be done through tutorials. All training of future professional teachers, for reasons given before, should include a major piece of research. Above all, the idea should be fostered that the student is studying a subject, and that courses, tutorials, and colloquia are mere tools to help him acquire knowledge. The student must be allowed to make mistakes, for he has to learn by them, and he should also be exposed to some teaching experience beyond the presentation of seminar papers.

Training as I have sketched it will probably take not less than three years, which is less than the probable time needed for the acquisition of a Ph.D. degree in the history of medicine and more than is necessary for a master's degree. For doctors of medicine, the main advantages of degree study lie in facilitating access and exposure to the activities of the various parts of the university and in a certain discipline imposed upon the student. When we have candidates with an exceptionally broad and rich background in the humanities and social sciences, degree study can be an impediment to concentration upon what is essential. There is no royal way to medical history, no short cut to effective training. On the other hand, there is no need for academic pedantry. I think that for quite a time to come we shall be able to judge our full-time teachers by what they know and what they can do, rather than by their degrees. In any case, we cannot dispense with the services of badly needed teachers until they have received Ph.D. degrees. I therefore think that study for a Ph.D. degree should be a matter for individual decision in each case where an M.D. degree has already been acquired.

There is some value in asking doctors of medicine who do not wish to become full-time teachers of the history of medicine to acquire a master's degree. This can conveniently be done within two years, perhaps even less. Limited language requirements and restriction to the study of medical history in its overall developments will characterize this approach. This degree ought to indicate that some minimum standards have been met. Its main value would be where the primary appointment is in a field other than medical history.

What should be the training of a person who already holds a Ph.D. degree in history, the history of science, philosophy, sociology, anthropology, or one of the biological sciences? Here, I think, we must distinguish between two categories. In one category, interest is limited; for instance, a classicist may wish to acquire a background for the ancient medical texts. The best advice I could give him is to spend a year or more in a department of the history of medicine, participating in its activities and doing some research in his own field in consultation with the members of the department.

In the other category are those holders of a Ph.D. degree who wish to become full-time teachers of the history of medicine. What advice should they be given? After what I have said, you will not be surprised if I confess my inability to give a satisfactory answer. Should they be asked to acquire an M.D. degree? There is no reason for saying no, if the person possesses the necessary premedical training and if his interest in medicine is sufficiently great. But I would hesitate to insist uncompromisingly on the acquisition of a medical degree, for this would exclude all those who cannot or do not wish to do so, and start others on a route which

may not end in medical history. Nor, on the other hand, do I believe in some kind of shortened medical curriculum calculated to impart what is essential in medicine. Apart from all formal difficulties, I am afraid that such a curriculum would lead to misunderstandings and wrong accents. I would much rather leave the matter to the exigencies of the individual case. Candidates in this category will vary in their preparation so much as to exclude an all-comprising answer.

I cannot hide a certain unease when discussing requirements and programs of study in the history of medicine. Having stated my belief that enthusiasm is no substitute for competence, I now feel compelled to say that technical competence is no guarantee for successful teaching of the history of medicine in medical institutions. It is a truism that a good teacher cannot be produced by mere training. But in teaching the history of medicine something is involved which singles it out from other subjects where the students have to master a larger or smaller amount of facts. The professor of medical history who, in seminars or lectures, is intent merely on a conscientious and clear presentation of how things once were will miss one of his chief functions. He must convince his students of the relevancy of what he has to say for their education and for their profession. He must achieve this not by arguing the importance of his subject, but through his teaching.

My own experience suggests to me that recipes are here of little avail, that there are many approaches through which this goal may be reached, and that every teacher eventually will have to find his own approach. Everything else being equal, the teacher who once went through medical school should hold an advantage. But I have not brought up this problem to add reasons for the selection of medical historians from among medical men. Rather I have done so because of the situation in which we find ourselves.

There is an immediate and urgent need for good teachers of medical history. The temptation is great to meet the demand by formulas of routine training and by a minimum regard for human qualifications. I would be sorry to see this happen. All of us who train medical historians carry a heavy responsibility: toward the young medical graduate who will soon find it difficult to return to more conventional medical work, to the institution that will expect him to stimulate as well as to instruct its student body and staff, and to the future of the history of medicine as a discipline that still has to find its place in the academic structure of this country. Let us be guided by our responsibilities.

COMMENTARY

Thomas H. Hunter

I believe that I was selected to discuss Dr. Temkin's paper because it was anticipated that I would find something to disagree with and would stimulate discussion by controversy. I find myself in no disagreement whatsoever. All I can do is applaud what Dr. Temkin has said and emphasize certain of my own prejudices, some of which I have foreshadowed in my remarks this morning. Perhaps I should say at the outset that I find myself in a position that I have been occupying more and more as I have spent longer and longer in administration in the medical school, namely, talking about something with which I have extremely limited first hand experience, and no claim of expertise. This does not prevent one from forming opinions, I have learned, and I have also found that it is best to state one's opinions for what they are worth.

I have already indicated that my own concern is above all what I alluded to as fostering the scholarly approach to all matters on the part of our faculty and students. I am reminded of an analogy with the question of the place of religion in universities. I happen to have been on the Board of Overseers at Harvard a few years back when a major turmoil was created over this issue, and there was great consternation in many quarters. Through a misunderstanding, I think, of what Paul Tillich really meant when he said that all teaching in the university should have its religious dimension, all hell broke loose for awhile. I had the opportunity to talk with him, being quite upset myself, and I was comforted to find that it boiled down largely to his belief that all teachers in the university should, in their teaching, give evidence of concern for ultimate values.

In parallel, I would say I hope we can find some formula for introducing the notion in our faculties on a very broad scale that all of their teaching should incorporate a historical dimension. I am not suggesting for a moment that this is the total role that I envisage for the department of the history of medicine in the medical school, but I hope one byproduct of the existence of a scholarly, firmly established group of medical historians either in the medical school, or in the department of history closely affiliated with the medical school, or in both, may be this one that I have mentioned.

Whether or not a department of the history of medicine becomes firmly established, those who are part time and those who have an interest in this area can get things underway immediately by setting examples in their own teaching. I have been very pleased that one of my protégés, who has now left the University of Virginia to become chair-

man of the department of medicine elsewhere, a relatively young man, has always made a practice of bringing to rounds or to the lecture room or seminar the available original references pertaining to whatever he is talking about. A few people on the faculty are taking this up, and I think it is an extremely valuable practice.

We have talked about getting young men into the history of medicine, and we have talked about interesting young students in this approach. Here I must introduce a certain note of pessimism. I drew an analogy this morning between the problem of the history of medicine as I see it and problems of preventive medicine. They are analogous in that, for some reason which I do not pretend to understand, young people in general, with obvious exceptions, tend to have very limited interests in the historical and preventive aspects of what they are studying. Mass populations do not have the immediate appeal of a sick patient. Similarly, to most young people historical matters are viewed as somewhat stuffy, pedantic, and of no immediate pressing relevance to their concerns.

Interest in these parameters of scholarship seems to grow with maturity, experience, and age. I certainly can in retrospect detect these changes in myself; I have seen them occur in a number of other people. This is a fact of life that we have to deal with, and I do not know how. It is unrealistic to expect a great number of young people to move heavily in this direction. In looking for people to do the teaching of the history of medicine, it is realistic to say that a certain number of individuals who have spent, let us say, half an academic career in productive scholarship in some other field of medicine may legitimately embark on the second half of their career by devoting a much more substantial part of their time to the history of medicine.

This is deplored by some people; it is felt that this will perpetuate the very thing that I am deploring, that is, a view on the part of the young that history is inconsequential and stuffy and for the old. On the other hand, individuals who have established themselves as men of true scholarly stature in some field of medicine do have a better chance of capturing the imagination of young medical students than do young individuals coming from outside the field of medicine who may have a very scanty understanding of the pecking order in medical students' hierarchy of values.

I think also that some of the very best history of medicine is produced by people who, so far as I know, have had no formal training in history. I would cite, for example, the article by Oliver Cope in a recent issue of the *New England Journal of Medicine,*[1] his presidential address to the Boston Surgical Society dealing with the development of understanding

[1]Cope, O. The study of hyperparathyroidism at the Massachusetts General Hospital. *New Eng. J. Med.* 274:1174–82, 1966.

of the nature of hyperparathyroidism, a magnificent treatise on the history of this particular development, in which he played a very central role. This kind of history can only be done by the man who was there. I believe that we should do everything possible to encourage this type of scholarly effort. I am certainly delighted to see medical students from Yale publishing in the *Journal.* This is all to the good. This sort of recognition of scholarly effort is fully equal in value to laboratory investigation; it is something we can actively promote, and an ongoing, active department of the history of medicine can most certainly accomplish this.

It is frankly dismaying, to take a very simple measure, to look at the book shelf that houses the journals of the history of medicine and to have to say that the thickness of the issue of 1965 is about half of the issue of 1940 or 1949. But when you look at the *Journal of Biological Chemistry* or the *Federation Proceedings,* it has become a telephone book, in this same period, when initially it was a nice little pamphlet. Things are a little bit out of kilter and vigorous efforts are needed to bring them back in balance. I am heartily in favor of what Dr. Wangensteen said this morning. The inducements and the interests have tended very strongly in the one direction. I would not cut it down. But I would do everything possible to beef up the support and to provide opportunities for the education of people along all of the lines that Dr. Temkin has alluded to. Certainly if he does not know how it should be done, I do not. I would only say that I believe we should take multiple approaches and not make any attempt to institutionalize this business or say that there is only one proper way to do it and set out a formula.

I should like to emphasize one other thing that was expressed this morning which I think is of great importance, and which offers us an opportunity now that did not exist in medical education a few years back. This is in reference to what was said about the general tendency in most medical schools to tear the curriculum apart and to replace the old lockstep over-stuffed ones with variations on the theme, all of which, I believe, contain much more free time, much more flexibility.

My own school, I am glad to say, has embarked upon a complete revision of the fourth year. I will not go into the details, but it is now possible for a fourth year student at the University of Virginia to do almost anything he wants which makes sense to a faculty committee and for which he can find a faculty sponsor. I am perfectly certain that had we been able to build a strong department of the history of medicine, somebody working in that vineyard would now find a far greater opportunity to interest medical students and to bring people into the field than was ever possible before in the history of medical education. This is another reason to applaud the timeliness of the Josiah Macy, Jr. Founda-

tion's interest in promoting this particular field. It is a very auspicious time. It is not only needed, but it is very apt to be fruitful.

Lastly, I would say that I sense a particular opportunity at my own institution to get on with this business, because we are fortunate enough to have the medical school right on the grounds of the University. I can walk to the Alderman Library in five minutes and visit with Dumas Malone any day of the week. This is a great advantage and I think that the interplay between the medical school and the various university departments outside of the medical school, not only in this field but in many others, is a direction in which most medical schools are trying to move. We are building bridges across many divisions of the university. This fits the trend of getting medical schools out of their relative isolation. The medical schools, on the whole, have been pretty firmly accepted now as valid components of universities, but a great deal more has to be accomplished to make this a reality and to make the interchange far more active and fruitful than it has been in the past. In the history of medicine there is an opportunity to further this sound general trend which I believe is taking place in university and medical education.

Charles W. Bodemer

I am somewhat in the position of Dr. Hunter, in not finding enough areas of disagreement with Dr. Temkin to serve as an opening for discussion, but there are several general comments I should like to make about who should teach the history of medicine.

First one might ask, does it really matter who teaches the history of medicine. This, of course, means that we need to decide, or each institution needs to decide, what it is that it wants from its history of medicine program or the history of medicine group, whatever it may be. If we are interested primarily in providing medical students with an opportunity for cultural exposure, for fingering old books, as Dr. Temkin says, or perhaps for recounting a few snappy anecdotes of vaguely historical relevance, then it matters little who teaches the history of medicine. But if we adopt the position that the history of medicine is and should be a distinct academic discipline, then it matters a great deal who teaches it.

Most of us here, I believe, think of medical history as an academic discipline that has something real to contribute and bears significance beyond the confines of the medical school environment. Dr. Hunter pointed out that his institution is closely related to the university. This is also true at the University of Washington and some other universities.

In institutions of this kind, where the medical school is a part of the university and is involved in more than training medical students, the history of medicine as a discipline has much to contribute not only to the medical school and to the medical student body, but to the educational and research purposes of the entire university. You are all aware that there is a scientific discipline called "developmental biology." It was once called embryology. Now, developmental biology embraces a great variety of subjects, including not only embryology, but, among others, biophysics, biochemistry, genetics, immunology, and radiobiology. I believe medical history has a comparable breadth, and may include intellectual history, social history, economic history, general history, philosophy, classics, biology, basic biomedical sciences, clinical medicine, and, certainly, languages. Medical history is a great interdisciplinary pot, and its inclusiveness places certain demands upon those who teach it and offers immense opportunities to those whose research is directed toward it. For this reason I wish to emphasize that there should be room, indeed, there should be encouragement, for individuals from a variety of academic backgrounds to teach the history of medicine.

I should preface my next statement with the acknowledgment that I am a poor forecaster. I strongly suspect, however, that we will soon see the history of medicine, as an academic discipline, undergo the same growth that the history of science has undergone during the past twenty years. This is of portent in general university education. None of us would dispute the fact that we have just passed through an immensely exciting phase in the history of the physical sciences; few would dispute that we have entered upon an equally exciting phase in the history of the biological and medical sciences. Concomitant with the explosive developments in physics there developed a greater public interest in the sciences. And it seems that the interest among college undergraduates and among the public, who fifty, even twenty, years ago probably could not have cared less about medical history, is likely to be greatly activated. I believe responsibility will then devolve upon those teaching the history of medicine to provide instruction for the general student, these courses perhaps eventually fulfilling a part of the social sciences or humanities requirements for the bachelor's degree.

My reason for stressing this possible role of medical history in the university is to emphasize the need for a diversity of professorial types and also to indicate that it is time now for the professional medical historian. *Professional* has different meanings to different people. I would define as professional a competent individual who is dedicated entirely to a field in terms of his teaching, his research, his life. I believe that the professional medical historians should come from many academic areas,

and they should provide a variety of instruction for a great variety of students.

Consider now the academic areas from which the medical historians might come and how they may interrelate with the various departments of the medical school and the university, if the medical school is closely aligned with a university. I see no reason why general historians, philosophers, anthropologists, classicists, linguists, and the various historical specialists should not be welcomed into departments of the history of medicine, each contributing in his own way to special areas of research, guidance of all varieties of graduate students, and special forms of instruction within both the medical school and university. A number of departments in the medical school and university can profit from this, and the general educational goals of each institution may be enhanced by the presence of medical historians of varied backgrounds and offerings.

One way in which I would question Dr. Temkin's proposition is whether it is necessary to have an internship as a part of the basic training of a medical historian. Obviously, if a person has an M.D. and internship he has a certain advantage. Regarding this as a requirement of every medical historian raises the problem of how to train someone to teach the history of medicine who is already educated at the doctoral level in a field such as the history of science. I consider it neither reasonable nor necessary to launch this person into the regular four-year medical curriculum and an internship.

A great deal of clinical training is experience, and, although I do so in the absence of supporting data, I believe it would be possible to impart to a person educated in depth in a subject other than medicine some of the critical concepts and attitudes and enough of the mechanical skills of clinical medicine to give him insight into the nature of medical practice without necessarily equipping him even to pretend to be a physician. I think it essential that a person teaching the history of medicine have some exposure to modes of clinical thought, to therapeutic approaches, to the doctor-patient relationship, but I am far from convinced that he needs to take courses in the regular medical curriculum or to have extensive exposure. The M.D. with an internship, perhaps even a residency, has an advantage if he is going to teach or do research primarily in the area of medical history that is related to medical practice, to the clinical disciplines and approaches. This does not mean that he cannot work side by side with the historian of ideas who has had some exposure to medicine through a well designed program of reading combined, perhaps, with special preceptorships or attendance at appropriate rounds, conferences, and seminars. This latter individual could be perfectly competent in teaching certain facets of medical history and would

be as valuable a member of the community of medical historians as the individual with extensive practical medical experience.

In considering who will teach the history of medicine, it is important to determine first who will be taught. The immensity of this question is great. As I noted earlier, the nonmedical undergraduate and graduate student may require instruction in the history of medicine. This is the case at some schools now. Thus, I teach one course in medical history which is primarily for college undergraduates. The class includes everything from freshmen to seniors, every variety of major, ranging from the traditional premed. to art history. This is a most exciting class to teach, and apparently the students find it fairly exciting to attend, not because of any professorial gift, but because it is basically an interesting subject and it is relevant to many of their current concerns. Clinical experience is not, in my opinion, requisite to teaching a class of this variety. In this instance, I believe a medically sophisticated general historian or an intellectual historian can perform as well as the *bona fide* M.D.

It is terribly important that we remain flexible at this time because, as Dr. Stevenson pointed out earlier, the programs that will be generated during the next two or three years are likely to become models, at least for some time, for the future methods of training scholars in the history of medicine. We must be absolutely rigid only in maintaining quality and in resisting compromise of the academic stature of the discipline. At the same time we should feel free to engage in carefully controlled and thoughtful educational experimentation. Indeed, if we are about to start trends in the methods for producing scholars in medical history, then it is actually incumbent upon us to indulge in this experimentation. If our experimentation is conditioned by an obsession with the idea of maintaining high academic quality, we cannot go too far wrong. We should not be bound by convention. We should feel free to take the classicist and attempt to make him into a medical historian by any educational device we deem appropriate. We should not be bound by any traditional attitudes that only one kind of person can teach medical history, so long as the field of medical history is kept professional, as I defined it.

DISCUSSION

Medical training vs. historical training

Dr. Temkin: I would like to make a comment first of all on Dr. Bodemer's discussion, because I would consider it unfortuante if we started an extensive discussion on an M.D. plus an internship or an M.D. without an internship.

Personally, I had only one year of internship, from 1927 to 1928. I wish I had had more. That is a long time back and I have forgotten much of what I learned. I feel hampered by this. It does not hamper me very much when I teach students; I still know more medicine than they do. But a good deal of teaching, and fruitful teaching, is done not only with medical undergraduates but to departments. We have given courses in the history of pathology in the nineteenth century and in the history of psychiatry, for example, where the students were not excluded but where the majority of participants, to our surprise, turned out to be members of the departments. Here the technical knowledge of the subject is of extreme importance. This is part of the history of medicine, and we cannot simply say that we shall disregard it as unnecessary.

I would not make a case of whether this one year has to be added or not. I myself think that it is easier to have a professional medical historian who comes from medicine basically and has then added history—so that the result is not a medical man or a historian but a medical historian—than it is to make a medical historian out of somebody who started with history.

I am not saying it is impossible. I just do not quite know how one goes about providing the necessary medical instruction to the historian. I am waiting for proposals and as soon as I hear one that I consider good, I will loudly cry "Amen."

Dr. Hunter: On the question of the M.D. degree, I would remind you that as we now stand the education of the physician is only barely started when he graduates from medical school. The superficiality of medical knowledge in somebody with an M.D. degree and a year of internship is a very real problem. It certainly does not equip that individual to go in depth into a great many fields. On the other hand, it does provide him with a background on which he can build.

But my point in alluding to the kind of history that an Oliver Cope can write is that this can only be done by a senior man. How much a historian of medicine nowadays will subsequently draw on a four-year medical course and a year of internship I am not prepared to say. If he leaves active work in an ongoing field that moves as fast as most fields of medicine move now, his medical knowledge will be obsolete in five years. This is part of a terrible problem we all have. Take the bio-engineer, are you going to start with a medical man and put engineering on top of it and have a half-baked engineer and a half-baked medical man? There are some who can really manage both and I am sure that will be true in this field. But four years of medical school, with or without an internship, unless it is built upon, is mighty slim pickings.

Dr. Berry: The internship is not important for the young physician so much for the new knowledge that will be added to what the medical school had provided as it is for what happens to the intern. Under the responsibility for caring for patients he becomes a different kind of physician for the rest of his life. It is a mistake for the future physician to put in four years and then to skip the fifth. I have watched many students grow up as much during the year of internship as they have during the four years in medical school. The changed point of view is what makes the difference.

Dr. Rosen: With reference to the point Dr. Hunter raised, it does not really matter whether medicine is going to be more complicated in the next twenty-five or thirty years. In fact, if you take medicine right up to 1940 or 1950, it is still relatively uncomplicated. You can understand a great many issues if you have had any medical training at all. The last fifteen years have still not been evaluated. Frankly, I do not know whether it is going to be quite as complicated as everybody thinks. Some of the earlier periods seemed very complicated at the time. Sometimes the complexity arises out of the fact that we do not see the total picture. We do need perspective.

After the basic training—and I think the internship is highly relevant because it gives an atmosphere which cannot be obtained otherwise—after that, it is a matter for the man's growth. It becomes a question whether you are to be problem oriented or discipline oriented. I believe the problem orientation is what you have to learn. If you have to learn new things as you go along, you simply learn them. The basic training, not increasing complexity, I think is the real problem.

Dr. Bowers: Dr. Temkin, I would like to hear you talk a bit more about a point we have discussed elsewhere. Although people can work effectively in the history of medicine who have not graduated from medical school, you expressed concern about maintaining some balance between medical people and nonmedical people coming into the history of medicine.

Dr. Temkin: This question, which I think is important, bears on professional psychology or professional sociology. We have in the history of medicine developed from a subject which was considered almost exclusively medical to a subject which definitely is no longer considered an exclusive domain of medicine. How far that goes is indicated simply by the fact that quite a number of people who address manuscripts to me put a Ph.D., which I do not possess, after my name, because they take it for granted in somebody who teaches medical history professionally.

There is, I think, a certain need for balance involved. I think Dr. Stevenson alluded to the composition of the American Association for the History of Medicine, which was formed several years ago, as practically a society of doctors. What would happen if the situation were reversed, that is to say, if the history of medicine were generally—not just by a few individuals but generally—considered a subdivision of history where one may or may not know a little medicine, I do not want to prophesy. I do not want to give the answer because I do not know it. I can only express a certain concern. If this happens, then I think quite a number of things which I still believe today to be the function of the history of medicine will go overboard.

Dr. Stevenson: I wonder if I might direct a question to Dr. Temkin and also to Dr. Rosen. During the course of this morning's meeting it was clearly suggested that the most important function of the history of medicine is regarded as establishing the links between society and medicine, the social factors in the background of medicine. Perhaps the simple answer to who should teach the history of medicine, then, is the general historian with training in sociology or

the sociologist with training in general history. If this is where the emphasis is to fall, are we asking history to do a job that may better be done by a sociologist historically oriented?

Dr. Temkin: I think that a sociologist can do better than a physician who is not a medical historian. It may be possible that he will do a better job than a medical historian: everything is possible. It would, however, be deplorable, whereas in the first case it would be natural.

In my opinion it is highly desirable that medical students and physicians be aware of the social relations of medicine. Dr. Rosen pointed this out adequately this morning. But I have added, for instance, that one should not neglect the technical history of medicine, which is equally a part of the history of medicine that has to be taught under certain circumstances.

Now, one can say, let us simplify it and let us atomize it and let the sociologists do the one and let the biologists do the other. I think we shall not get very far if we completely atomize it. I think we will still need the medical historian who holds it together and who in most cases will be the one who has to do the teaching, or, if not the only one, at least the one who has to know and to direct the teaching.

Dr. Rosen: In answer to your inquiry, medical history is an interdisciplinary field. It may be that you can take a variety of people, train them so that they have some elements in common, and use them for teaching, but my answer to your question would be negative. I do not think that you would want to take, let us say, a sociologist unless he was a special kind. If you took a historian or a physician, trained as Dr. Temkin indicated, and saw to it that he had some understanding of theories of social organization and change, this would fit into the picture quite properly. The history of medicine, as I tried to point out this morning, is not the question of general social organization but what happens within it.

For example, at the recent meeting in Rochester a surgeon presented a paper on the great explosion of surgical operations that took place between 1880 and 1890. It is obvious that it occurred because anesthesia existed and antiseptics came into the picture. Most of these procedures were already developed in theory but until then could not be carried out. Certainly in dealing with the history of surgery in the nineteenth century you must understand the logic behind these operations. You cannot understand why they finally blew up, so to speak, from surgery alone. You have to go to microbiology. It is in this sense that you have a set of interrelations.

There is one other kind of problem that the man who is trained in technical problems alone may not actually see, the necessity for a comparative approach. You can get this partly from historical study alone but a comparative study really involves a kind of history that is usually not taught. It involves what is today know as comparative history, which involves looking at different periods and their common characteristics. For example, late antiquity, that is, the period from about the third century on; the period at the end of the Middle Ages; and to a certain extent our own period, can all be characterized in some degree

as ages of anxiety. They have certain characteristics in common. If you take people of certain types in these periods, you can examine their similarities and dissimilarities. This is no longer history in the traditional sense, but the comparative use of history for the establishment of sociological generalizations. It is a different kind of history. You have to train the person who is going to deal with this basically as a historian because that is where his material comes from. He has to understand how the material is derived and be able to validate it before he can draw any conclusions. Basically he must use historical method. Whether he is a physician, sociologist, economist, or anyone else, he has to have historical education.

Dr. Holmes: It seems that medical training is indispensable as a kind of experience that cannot be studied from a book; that the person who has not had the experience is at a disadvantage. I would like to ask Dr. Temkin if he feels this is a different kind of problem from those any historian faces, for example, a historian who wants to write about the frontier but who has never plowed a furrow. How can anyone write about the president and his politics who has not felt the burden of such an office? I wonder if the problem of the medical historian is so different that it requires a kind of training other historians do not have.

Dr. Temkin: I think among other historians there are degrees, too. I find it deplorable, for instance, that historians of science are being trained who have had no science. This, I think, makes poor historians of science. I do not say that all have to have a Ph.D. in physics, but I do not think that anybody knows a science who has not had a rather strong exposure to it in the laboratory, not even the college laboratory. He can talk about all kinds of theories, but what does he know about the living problems and how to cope with them? However, I think that even in the history of science this may be easier than in the history of medicine because science to a considerable extent is taught in the class room, whereas a good deal of medicine is taught in the hospital.

As to other historians, I do not want to give examples all through. Is it necessary for the general historian to participate actively in government? We must not forget that in a democratic society we all have some experience. Whether more active participation is desirable or not may depend on what the historian has to do. I can speak here only in probabilities because that is a field of history in which I am not competent, but I would not be surprised if certain political historians would be better off if they had an intimate knowledge of government procedure.

Dr. Miller: I would like to reinforce Dr. Temkin's argument that the person teaching medical students and faculty should have medical training. I am in the position of a medical historian who does not, and I find myself constantly faced with questions which are essentially medical. When you are giving a survey course to first- and second-year medical students, it is essentially the medical content that they are most interested in. If you are talking about the history of syphilis, they will start asking you questions about syphilis which you cannot answer. Even just the basic four-year undergraduate medical education would help. The nonmedical person who is interested in the history of medicine can

operate successfully in certain aspects of the subject, but if you are trying to teach medical students and medical people, a medical education is essential.

Dr. Duffy: I am not so sure that the history of a profession ought to be taught by people in that particular profession. Presumably then only businessmen could write economic history. I am inclined to think the history of medicine runs real dangers if it restricts itself to the medical school. Part of the value of the history of medicine is that it can bring a new viewpoint to the medical school.

Anyone who goes through medical training is necessarily conditioned by it. Medicine does attract people with a certain crusading spirit, and I think medical students do have the feeling they are going to do some great thing in the world. I am not condemning it. I think it is fine. But these people are conditioned, and they come out with a particular viewpoint.

It may be healthy for medical students to come in contact with a different viewpoint, to come in contact with someone who may question the accepted ideas within medicine. Admittedly, there is a need for specialized historians of medicine, men with a grasp of the technical side. Obviously I would not attempt to write on certain aspects of twentieth century medicine, for instance. It is a highly complicated field and I am not qualified for it. On the other hand, I think we need to keep in mind that one does not need this highly technical, specialized knowledge in order to understand the medicine of a hundred years ago, when, after all, all one needed to do was to simply read medicine. I would suggest that perhaps someone with a little training in philosophy is even better able to understand eighteenth century medicine or theory than a professionally trained M.D. There should be room for all types of medical historians.

I think it is essential that there be a close connection between the major discipline, which I consider to be history, and what I feel is a subdivision of it, the history of medicine. There is a real danger that the history of medicine may become too colored by the professional medical viewpoint. As it is, too much history of medicine has been written more or less in a vacuum, by M.D.'s who do it as a hobby and who seem to think of the history of medicine purely in terms of the history of discovery.

Dr. Greene: I would like to take exception to Professor Duffy's statement, at least in part. If I understood him correctly, he said that a person without much medical training would have difficulty dealing with twentieth century medicine but that he might do better in dealing with the eighteenth century. It seems to me this involves a basic misconception.

There are many aspects of the history of medicine—technical, social, intellectual, and so forth. The person who has training in social history and has done research on these particular aspects, is going to be able—if he does well with anything—to do well with these aspects at any period. But he would not do well with the technical aspects of either twentieth century medicine or eighteenth century medicine. Also, so far as clear understanding depends upon an appreciation of some kind of personal relationship between the doctor and the patient, if he has this kind of medical experience, he will be in a better position to appreciate the problems whether he is concerned with the eighteenth century

or the twentieth century or Greek antiquity. It is not a matter of chronology but rather of which aspect of the history of medicine the historian is dealing with.

That, I think, is why it is so very important that the history of medicine be studied by people with different backgrounds and different approaches. Twentieth century medicine has many aspects other than the technical which need to be dealt with. To get some kind of complete picture of the medicine of the period you must pool the writings and resources and ideas and insights of people writing medical history from many different points of view. This is why the kind of seminar in which people trained in different ways discuss the same texts, whether eighteenth or twentieth century, each looking at events in the history of medicine from his own point of view, can be highly fruitful. Their points of view rub off on each other. And this is also a way in which a historical point of view can rub off on a medical man who is not a historian. I have tried this in the history of science—getting modern biologists who have had very little historical training to read Cuvier's *Discourse on the Revolutions of the Surface of the Globe* and join in a class discussion of the text. Their historical interpretations may be dead wrong, but they will hear how I look at it and how other people look at it. If one of the purposes of medical history is to infuse some historical dimension into all of medical training, this is one of the best ways to do it.

Dr. Bates: If I may be forgiven for a somewhat autobiographical anecdote, I should like to mention an experience that struck me very forcefully when I first came to the Institute of the History of Medicine. One of the things that I appreciated most about having gone through medicine was that I felt the rest of the world was open and accessible to me through books, but that I could not possibly have had access to medicine without the experience and the training that I had had. With this smug feeling tucked neatly away among my prejudices, I ran into someone in the Institute who said precisely the same thing only the other way around: that he had come from one of the humanities departments, that the thing he liked about having gone through what he went through was that he could not have gotten it any other way, and that medicine and science and the other things he could, of course, get through books. This struck me like a thunderbolt because I realized how easily one becomes aligned according to one's own vested interests or background. I think it is not likely that many historians with medical training are going to argue against having medical training and not likely that many who have not got it are going to disqualify themselves from medical history and withdraw from the field. Somehow it just so happens that those who argue for it often do have medical training and those who argue against it do not.

I expect that everyone else here feels as I do, that we are not dealing with an "either/or" proposition, or even saying what is the best. But I would like to re-emphasize what I understand to be one of Dr. Temkin's points, that somehow there must be a balance in the backgrounds of the various people who collectively represent medical history. If ever all medical historians have medical training or all of them do not, or if medical history is taught only in the college or only in the medical school, then the field is in trouble.

Dr. Blake: The point has been made several times that various kinds of people are needed in the field. Perhaps one of the reasons for this is that we are talking about two kinds of medical history, depending upon the purpose of the course of instruction and whom one is attempting to instruct. There is medical history for the physician, or the prospective physician, and there is medical history for the college student. The prospective physician has a great deal more interest in and need for the technical side of the history of medicine, which the prospective patient, if I may call him that, is perhaps better off not knowing. For the layman or college student, for whom medical history is simply a part of history, it is very possible that the general social and intellectual historian can be a more stimulating teacher than the person whose interests are too closely focused on medical problems. On the other hand, when you are teaching medical students, you want them to learn about medical problems and you have to have people who are familiar with medical problems and medical teaching.

Dr. Stevenson: It does seem to me that there is some danger of exaggerating the degree of difference. I teach Yale College juniors and seniors, and first year medical students in the Yale Medical School. The difference between these two groups is really rather small. The first year medical students know some anatomical terms that the Yale College seniors do not, but otherwise they are very much of a "oneness." The former are committed to medicine but, as it happens, most of the College class is made up of premedical students who feel equally committed to medicine. I do not think there is really as much room as one might suppose for a different approach in dealing with these two groups.

Dr. Blake: In the college, a good deal of the teaching of medical history might profitably be done not in a special course in the history of medicine, but in a course on social, cultural, and intellectual history, where the history of medicine could be presented in its broadest concepts. There have been notable instances of social historians who have brought important areas of the history of medicine into their courses. For example, when the National Science Foundation was casting about for somebody to write the history of the Federal government in science, the top three candidates were all Harvard graduate school products from the history department. None was a former student of Sarton, but all were former students of Schlesinger.

I would grant that there may be little difference between the junior or senior premedical student and the beginning medical student. But I would hope that teaching medical history to at least some of the medical students will not stop at the end of the first year but will go on into their clinical years and even into the period of internship and residency. This is where the medical training would seem to me to be extremely important.

Dr. Bowers: In thinking about the history of medicine through the past months, I have wondered several times whether it is possible to take a man who has his Ph.D. in history or in another nonmedical field and structure a medical curriculum, as it were, so that in a period of let us say, two years he could learn enough basic science and enough clinical medicine to be a highly effective scholar in the history of medicine. In other words, if he went to Duke and took the two-year

curriculum without all of the free time, could he be enhanced as a scholar in the history of medicine?

Dr. Long: There is no doubt he will be enhanced by taking two years of the curriculum. On the other hand, I would not be willing to award him an M.D. degree on the basis of it. For general information, our curriculum in the first year of medical school comprises those courses that previously occupied the first two years. The time for each course is, of course, condensed, and we have pared these courses down to their intellectual and conceptual essentials embroidered only by those facts necessary to make the concepts meaningful. The second-year curriculum comprises five seven-week rotations through conventional clinical subjects. These first two years of medical school will be taken by all students. Thereafter, in their third and fourth years, they will have a series of elective courses which they can select in consultation with the faculty. As you see, we have introduced flexibility, but not short-cuts to an M.D. degree.

Dr. Bodemer: There is another possibility, conceivable particularly in those schools where the teaching responsibility is not limited to the medical student body alone. Many medical schools now have varying obligations, to college undergraduates, to students in nursing, dental, and paramedical fields, and to a great variety of graduate and postdoctoral students. Thus there are courses available in a variety of subjects which could be very well adapted to a person entering with a Ph.D. or even a B.A. in history, making it possible for him to receive basic-science training adequate for his rotation through three or four primary basic clerkships. Such a program would obviously not equip him for the practice of medicine, but it would give him an appreciation of medicine, some insight and experience, and thus contribute to his armament as a medical historian. It is quite conceivable that in some schools arrangements may be made with the history department for a conjoint Ph.D. program including a special, truncated version of the regular medical curriculum.

Dr. Cassedy: It seems to me that there is danger in this, and that we should not try to remold the general historian into the equivalent of an M.D. We should keep the distinct values which the historian brings to start with. Also, there is a case to be made for the contributions which are made to the history of medicine by people trained as general historians, some of whom have virtually no formal training in science or medicine. I would not rule them out at all, even in medical schools. Such an instance in the history of American science—i.e., the influence of Arthur M. Schlesinger, Sr.—has been described very recently by Hunter Dupree in the *American Historical Review.*[1]

Dr. Duffy: I think that the proposal for two years of medical training as background for a Ph.D. in medical history is a very good idea. I wish that I had had some training such as this. It would immeasurably simplify my work, and this is the type of training that I hope we can do at Tulane. A general historian, for example, going into the medical field needs to get the atmosphere and the feel

[1] Dupree, A. H. The history of American science—a field finds itself. *Amer. Hist. Rev.* 71:863–74, 1966.

and the attitude of the medical school. I do not want him to be completely lost in it, but he needs to understand and appreciate it. This would accomplish that purpose very well.

Dr. Miller: Would a Ph.D. student in history have enough scientific background to be able to take medical school courses in the basic sciences?

Dr. Bodemer: A graduate student in our Department of History was doing his dissertation on a medical subject. I do not remember the field in which he received his undergraduate degree, but it was not in a science. His graduate training was in history, specifically in the history of science. In order to increase his understanding of his research topic we placed him in the medical school in a series of courses in the basic sciences required of the medical students. It was a little painful at times, but he did average work. He did not get any clinical training, but he completed gross anatomy—an experience for anyone—neuroanatomy, neurophysiology, "baby" biochemistry, and pathology. He did reasonably well in all these courses; he was a solid C student.

Dr. Duffy: I was interested in Dr. Hunter's comment on the paper by Dr. Cope. While I think that what Cope has done is excellent, I do not think that it is history. If we operated on the assumption that only participants could write history, we would be in difficulty dealing with Hippocrates. History's chief value is that the writer can view things in perspective. Each generation looks backwards in the light of its own experiences.

In a paper I heard recently on thoracic surgery, the author, like many surgeons or physicians, flashed a series of names on the screen and then proceeded to tell us who first performed each of many operations in the last sixty years. We went through eighty or ninety names before he was finished. Periodically he would forget his paper, throw in some personal experiences, and actually make a contribution. The point is, this is not history. It contributes to it. Dr. Cope is getting the source materials together. Fifty years from now what Dr. Cope has done will be extremely useful, but it will not be history.

Dr. Rosen: Dr. Duffy's point about Cope is very well taken. You do the same thing through oral history, with which I have been occupied recently: you can accumulate information on a tape recorder. It is easy enough. The man just talks, given the necessary stimulation. That is still not history. If this man is to write history, you must begin to teach him to think in historical terms, which means he has to be able to evaluate source material for one thing, to understand the difference between primary and secondary sources and the logic by which you arrive at a conclusion as to whether something is valid or not. This can only happen if you have a department or professor and a teaching program.

Dr. Chapman: One of the nice things about being strictly an amateur in this whole field and not really identifiable as a historian of any kind is that I have not felt the compulsion to define things neatly. I have heard this afternoon several things that were said to be history and several things that were said not to be history and I am confused. I would like to ask, for example, how long Oliver

Cope must wait before he can write about the history of parathyroidism or how long Winston Churchill should have waited before he wrote about the history of World War II. We are drawing a very useless distinction between the chronicler on the one hand and the historian on the other. It would surely be difficult to find a pure chronicler, that is, someone who is just laying out material as it happened without injecting interpretations or trying to interrelate it.

Dr. Stevenson: I think Dr. Duffy should comment on why he thinks the recent review is not history. I take it your objection is not merely that it deals with recent work.

Dr. Duffy: No, I am saying that firsthand accounts are not history. They are what the historian uses as source material. If you compare Eisenhower's *Crusade in Europe* with other accounts of World War II, you are not sure you are reading about the same war. Each writer sees it from his own viewpoint. He tends to gloss over his own mistakes and give himself full credit, whether it is due or not. I am glad Eisenhower did this. I think he made a contribution which will help lay the basis for someone fifty years from now to read all of the accounts, check them with the newspapers and other sources, and finally synthesize the approximate truth.

The participant writes only in terms of his own experience. History, above all, is synthesis—the interpretation and analysis of dozens of different accounts to explain why and how events happened. This cannot be done in terms of the present. We are too close to it, we see only a little part of it.

Dr. Rosenberg: I would not say this absolutely; it depends on the individual. Some men do have a sense of perspective and can write very valuable articles. They can contribute things no one else could. There are inside stories. A person who regards history as important and has the right kind of sensitivity can write about something he has participated in.

Dr. Duffy: I would agree.

Dr. Rosenberg: I think there is an institutional problem here. Historians who write about medicine are often afraid of the intellectual problems, that is, the real questions that bother doctors and how they solve them. Yet doctors who are concerned and write about these problems do not do an optimum job because they do not have the historical training. They do not see things in the total context.

It seems to me that the central problem in the history of medicine as a discipline is the need for finding some institutional means for making the doctor who is aware of the intellectual problems in medicine also aware of the techniques and needs of the historian. One good way of doing this is for a physician who has finished his residency to take a year or two off in an environment where he must be a total historian. The problem, in a way, is that people who teach medical history from the point of view of their own sub-discipline never immerse themselves fully in history. They can do it only a few hours now and then, and this is not the way to understand the historian's point of view. This is really all the doctor needs to know—what the historian is really doing and how he gets at it.

Institutionally the only way to get around this problem is by putting the doctor in an office next to Dr. Temkin, who is a practicing medical historian, and making him go through a whole year or two of being a medical historian—and vice versa, by putting the historian in a medical school for two years. Make him live in the medical school dorm. Make him eat lunch with the doctors. This would not make him a doctor but it would give him a greater sympathy for the doctors' problems, a greater understanding of their intellectual concerns. It seems to me a lot depends on the pertinence of such institutional arrangements.

Dr. Chapman: In relation to Dr. Rosenberg's comment I should like to ask, how long does it take? This shatters one fond notion I have. In our own school we have men who have been through two years of residency training in internal medicine and wish to spend half time in clinical work and half time in laboratory research. I have argued that it is just as respectable for them to spend half time in the clinics and half time in medical biography and history, providing a program is set up so they can work for a year or two with a medical historian who can convey the historian's methods and points of view.

Dr. Rosenberg: I did not mean to make any absolute statement. It depends on the appropriateness of the particular institution. It seems obvious to me that a sensitive person could be successful at this provided he had a program which could be integrated at the school with genuine historians.

Dr. Temkin seemed to want five years of medicine as a prerequisite. I was thinking that one or two years of history is a modest enough dose. The reason I think so is this: it is easy to think of history as a do-it-yourself discipline. Many people feel it is the last field in which any idiot can pick up a book and go to work. For a lot of subtle reasons it is not that simple. In order to write good history, you have to be shaped by the field. You have to drink it in. This is one reason why seminars are good. They are boring and tedious, but that is how you learn to be a historian. I think you have to show your prospective M.D. medical historians that history is something that has peculiar qualities, attitudes, and values. The only way to understand this is to do it. I have often heard medical people say there is a kind of *mystique* about medicine that you just cannot understand if you have never been in medicine. Sometimes I shrug my shoulders and sometimes I argue, depending on what mood I am in. I think as historians, we have some right to make the same kind of comment, but I am not going to push it very far.

Dr. Chapman: Why?

Dr. Rosenberg: Because I think a person with sensitivity and a good preceptor can get this point of view in a year or two, even part time. It depends very much on the circumstances.

Dr. Long: We have heard a lot of talk this afternoon about whether or not an M.D. who wishes to go into the history of medicine should take an internship or not, but this is looking at only one end of this problem. I am concerned about the admission of students to medical school. At the moment I think our selection system tends to discriminate against a student who has the rather broad human-

itarian instinct and background whom we would like to see enter the history of medicine. It would be a major contribution to the solution of our manpower deficiency if we could open our doors to a few students who have a valid interest in the history of medicine before they come to medical school. I notice with great interest that the Macy Foundation is including predoctoral graduate students in its fellowship program. I think it is to be congratulated for this. Bringing students into medicine whose careers are already dedicated to the history of medicine would have an added benefit, the intellectual "rub-off" between these individuals and the students whose primary interests are to care for sick people and find the cure for cancer.

Dr. Stevenson: There are now quite a number of medical schools where the students can take a year between the standard preclinical and clinical years to study biochemistry or something else which they think will be of advantage to them. One student at Yale who has since taken the M.D. did interrupt his program to take a year in the history of medicine at this stage and another is doing so now.

Dr. Bodemer: Most schools have arrangements of the sort you have mentioned. There are also possibilities for utilizing summers to get a more formal exposure to another area.

Dr. Greene: I must say I am a little uneasy about the idea that you can acquire a historical point of view in one year. I wonder, Dr. Temkin, how you feel about this. Suppose you get a student with an M.D. who has little or no history, how does he acquire a genuine historical point of view?

Dr. Temkin: You invite me to tell more or less how we proceed, because the medical man without particular historical knowledge is what we usually have to deal with. We expect a language and a half, that is to say, he should be able to read one language more or less when he comes, and he should have had at least some rudiments in another, so that it can be built up to the required level. That, by and large, has worked. Then, the first year is devoted to medical history on an all around but rather superficial basis. He takes the required course in our school. He participates in a seminar. He does some tutorial work, some guided reading which extends not only into medical history but also into history, philosophy, literature, and so on in a horizontal fashion. He does not go very deeply. He at the same time takes the course in the history of science in the other part of the university, and usually at least one other course in the humanities or social sciences. During that first year he should get an overall picture and fill in the gaps caused by his special deficiencies.

In the second year he is expected to go into depth as far as medical history is concerned, do much more reading of original source material, and take one graduate course in the other part of the university so that he is exposed to their rigid requirements.

By the end of that year he is expected to have chosen his field of concentration, that is to say, where he will write his thesis. From there on it depends more or less on who he is or what he is. He could still take an additional course

because he is interested in something particular. Whether he concentrates exclusively on his dissertation is no longer a matter of programing but of individuality.

The language question

Dr. Bodemer: The question of language facility is often blandly ignored, and yet it is terribly restrictive. One of the genuine advantages of special programs in the history of medicine is that they allow time for the study of language. Frankly, from my personal bias, I cannot imagine anyone performing scholarly work in the field of medical history without knowledge of Latin, French, German, and, of course, English, as the minimum. The personal character of this belief is, perhaps, indicated by the fact that I do not include Greek in this list. Were the individual concerned primarily with the period of antiquity, or were Greek somehow appropriate to his activities as an historian, I would include that language. Under any circumstances if provision can be made to give students time to study languages, it would add more to their research potential, perhaps, than an additional eight weeks of clinical instruction.

Dr. Temkin: I am glad that the language question has been brought up, because I think it is very important that we deal with the problems realistically when we talk about getting medical students interested in the history of medicine to the degree that they will choose it as their career. One of the most formidable obstacles that I have met is that they are afraid of the language barrier. To them it apparently looms much larger than anything else. They had, perhaps, a course in Spanish, and suddenly we require them to read Franch and German. It is an interesting commentary that what we now require for a Ph.D. in the history of medicine was until about the end of World War II an entrance requirement for every Johns Hopkins medical student. I wish that somebody could help me and others who are in a similar situation to see how this can be solved, because this is a real and definite obstacle.

Dr. Rosen: The only way you can deal with it is to insist they learn the language, which means, of course, that they take a course. We have had to lay that down as the law. The result has been that we have had no further complaints, and they have been taking language courses.

Dr. Temkin: That is what we do.

Dr. Duffy: The language question is basic in any Ph. D. program. The problem really lies in the development of American educational systems. When the Latin grammar school went out the window and the new reform movement came in during the 1920's, subjects such as Latin and Greek were abolished in favor of social dancing. In the 1920's and 1930's virtually no languages were taught in school and, as a matter of fact, there is difficulty today, now that the schools are restarting languages, to get language teachers at all levels. Until we

can solve this problem, we will be faced with the fact that the average student entering college simply does not have an adequate language background.

Dr. Stevenson: Surely there is another factor here, too. When I was a medical student, I was authoritatively informed by the dean of the medical school that it was a waste of time to learn German because German medicine was *kaputt*. I think that that attitude has changed, and we may have more doctors, a small number, perhaps, who think it worthwhile to learn a foreign language for strictly medical reasons. Is this possible, Dr. Berry?

Dr. Berry: Yes, I think so. One finds some students who are really gifted in the field of languages—they have become excited about languages. We have a boy at the Harvard Medical School who is a top flight student of languages. He has Latin and Greek, French and German, Hebrew and Arabic. He is having a great time working on the history of the plague of Athens. When one happens to have an individual like this, one should help him do something special. This is one way to foster people for the field of medical history.

Dr. Bodemer: One of the advantages of having defined programs in the history of medicine is that people can anticipate entering the field, and, as in other cases, prepare for it adequately during their earlier education. It should be noted, however, that this is going counter to the current trend in American graduate schools, where more and more the replacement of at least one language requirement by such things as a course in computer technology is being discussed.

Dr. Wangensteen: Why can't we get the languages taught again in the high school as they used to be before World War I? I was exposed to one year of high school German, but we had a German teacher who had great enthusiasm for her subject, and I have been able to build my knowledge of German on that one year.

Dr. Greene: The situation is changing now in grade schools and high schools. The students coming up now have much more language. It is curious that this is going on at the same time that many departments in the graduate schools are cutting down on their language requirements, so that students are going to have more languages and need them less.

Think, plan, experiment

Dr. Wangensteen: I am inclined to believe that out of discussions such as this, medical schools and universities should be able, within the foreseeable future, to draft a program of quality that would result in optimal training for medical historians. A year in history, as Dr. Rosenberg stated, and perhaps two to three years in some biologic discipline would constitute good basic training for the medical historian. An ideal arrangement, in my opinion, would be a six to seven

year program leading to a bachelor's and a graduate degree with major emphasis on history and biology. The trainee should acquire expertise in the techniques of historical exploration and a broad exposure to biology. He need not be a full-fledged M.D. Deans and faculty, interested in the curriculum, should begin to think and plan an optimal course for the training of medical historians. The biologist-historian has a great future in the medical curriculum and in energizing research.

Dr. Bowers: I share Dr. Wangensteen's feeling 1000 per cent, as a person who is a friend of this field, and I have now testified to my friendship financially. But I believe that people in the history of medicine need to do some very serious thinking as to how to bring in the manpower that they so urgently need and how to maintain the balance that Dr. Temkin has reaffirmed as of first importance.

Dr. Bodemer: I would re-emphasize Dr. Bowers' statement. We need to experiment. At this stage we are operating purely on an empirical basis, and it is thus quite important that for several years we have different programs, including some that are frankly experimental in nature. We should assume that two or even three years during which different programs are developed in different places with different objectives are requisite to the elaboration of formal programs or declarations of criteria.

Dr. Rosen: Quite a number of years ago Professor Sedgwick at the Massachusetts Institute of Technology developed a program under which a person getting the doctorate in public health took two years that were essentially equivalent to what the medical student took. This concept has great benefit in the sense that it brings the student in contact with medical people almost from the very beginning. On the other hand, the person who is being trained as a medical historian must also have the expertise of the professional historian, and this has to be acquired in the university. This would require a kind of joint program.

We have had experience with an interdisciplinary program on the graduate level at Columbia. The biggest problem is maintaining quality. To do this we have had to involve representatives from a number of different disciplines. The same principle will apply in medical history. Unless the program is worked out very carefully, the graduate is in danger of being neither one thing nor the other.

Dr. Stevenson: Peter Parker decided at the age of fourteen that he wanted to be not a medical historian but a medical missionary. He went to Yale and asked if he could study medicine and divinity concurrently. He was allowed to do this, and take the two degrees at the same convocation in 1834, on condition that he would neither preach nor practice in America.

Dr. Bowers: So he went to China.

Dr. Bates: I would like to interject a note of reservation about concocting a specific program of training for medical historians as a means of attracting more people into the field. I seem to detect an assumption that one reason people shy off is the length of time required, and I am not sure this is right. Many

people who go into medicine resign themselves to a considerable period of specialized training after the M.D., often with the full knowledge that they will never receive any remuneration beyond that of the academic life. Also, Dr. Rosen has said we are in a vicious circle: we cannot attract anyone to medical history until we can show what it can do. I agree that this is a real problem, but designing a shortened course is not a valid way of overcoming it because there is no more reason for people to go into that course than into medicine plus history. It is not all that much more attractive.

There are many urgent needs in medical schools, but I hope that medical history will not be picked upon to solve them when other programs could do the job as well or better. We should entertain alternatives to medical history rather than, or should I say in addition to, alternatives to the training of medical historians. Perhaps the crisis is not so much in medical history as in medical education generally.

Dr. Stevenson: Perhaps we despaired too soon. Dr. Hunter took a very gloomy view of the possibility of attracting young men to the field. There has been no one in most medical schools upon whom a student could pattern a self image and there have been no funds available for such training. Public Health Service training grants now exist. The number of training centers may be increased. The Macy Foundation is providing funds for postdoctoral training and in some cases for predoctoral training. Perhaps it is too soon to decide that it is necessary to devise some lesser sort of program. This program might then attract chiefly failed medical students. In the past they have turned to dentistry and pharmacy or have become detail men for drug houses. I would be sorry if they became medical historians.

Dr. Miller: Dr. Stevenson, you gave us some historical data last night about when general history became accepted as an academic discipline. Can you tell us what factors caused this 100 years ago?

Dr. Stevenson: I have not made a careful study of this question. I did suggest that the struggle went on in Edinburgh for a hundred and fifty years before they achieved what was wanted. My point in bringing this up last night was this, that a hundred years ago trained historians were very rare in Britain just as trained medical historians are now rare in the United States. I think there is some analogy between our current situation in medical history and the situation then in general history.

Dr. Cassedy: In the United States, professionalism in history might be dated from the founding of the American Historical Association about 1885. It depended a good deal upon the transplantation of the German concept of higher education to the American graduate school.

Dr. Rosenberg: This shows the importance of setting up an institutional arrangement that has an interest in perpetuating itself and is well calculated to support and promote not only research but teaching as well. This is why the German example is so important. The whole pattern of the professor, of what

the professor should be doing and what the university should be doing, which is perhaps the most important change that came from Germany in the nineteenth century, has not really taken hold in medical history except in a few scattered places. It seems to me that for it to develop as a discipline, it has to fit more or less into this pattern. There are many studies showing the importance of institutional factors in shaping the intellectual development in a particular field. This is why I have been harping on the necessity of solid, stable institutional contexts for medical history.

THE HISTORY OF MEDICINE AS A PART OF THE UNIVERSITY COMPLEX

Donald G. Bates

So far, this conference has addressed itself to the subject of teaching medical history in the medical school more or less under the headings of why, what, and who. As I understand it, we are now to extend the subject beyond this general framework in two respects: first, to consider the whole discipline of medical history and not just the teaching of it, and secondly, to do this in the broader setting of the entire university. To the why, what, and who, we are now to add some thoughts on the where.

In addition, I also feel at liberty to shift from prescription to description and from the future perfect to the present indefinite. For, among other things, to dwell exclusively on what *should* be, without noticing what *is,* runs the risk of merely reciting answers which obviously follow from the questions already discussed.

Before I start, the extramural sources of, and influences upon, the history of medicine should at least be mentioned even though these really lie outside my subject. Many practicing physicians, on an avocational basis, are both consumers and producers of works on medical history. In either capacity, they must not be forgotten. Potentially more important is the fact that medical history receives financial assistance from nonuniversity agencies and is also fostered in nonacademic centers. This conference is supported by such funds and convenes in such a place. In the immediate years ahead, extramural organizations may have far-reaching effects on developments in the history of medicine and in its relations to various parts of the university.

Where is the history of medicine in the university setting now? Where do present circumstances tend to be leading us? What relations have these to where it ought to be?

Perhaps one of the most obvious things about the history of medicine is that its cultivation has been overwhelmingly the concern of the medical community. It is probably still true that the medical schools on this

continent are providing most of the facilities, the employment, and the demand for medical history. That their interest, and often their plans as well, have become the concern of other interested parties in the university will be discussed later. But certainly, what people in the medical schools do about medical history within the next few years (including doing nothing) will be very important for the future, even if it can no longer be assumed that their actions will have an exclusive or even overriding effect. It is germane to our subject, then, to begin with the prevailing attitudes towards medical history to be found in the medical school, and follow with those interests which come from elsewhere in the university, taking special note of their potential effects on the placing of the history of medicine within the university setting.

There is, in the first place, a large, somewhat miscellaneous, and random activity in many medical schools which, sometimes owing more to tradition than to subject matter, is called medical history. The setting is usually informal—a club, society, or very casual elective seminar. The atmosphere is social rather than academic. Priority is given to fellowship over scholarship. Frequently, history is treated more as a sentiment, often akin to inspiration, and as a relief from, rather than as an addition to, the scientific disciplines which are the students' and physicians' daily care. The interests displayed can be characterized only by their great diversity in subject matter and approach. Aside from an occasional avidity for local history, the commitment to historical inquiry is usually tenuous; attention may rapidly shift to things like medical ethics or other philosophical or social contemplations of current medical problems. The underlying motives may be anything from the fostering of professionalism by the transmission of medical lore, through the providing of a means for enhancing student–teacher relations, to the caring for local history and its artifacts. Perhaps the most commonly expressed goal is that of humanistic enrichment for those who elect to participate.

To distinguish this concept of medical history from others I wish to discuss, I shall call it the "society" approach to medical history, but, by thus isolating it here and giving it a name, I do not mean to imply that it actually exists in such a pure form. Nor am I suggesting that this is the outlook of every society or club devoted to medical history, nor that this attitude does not exist where there are no such organizations. What is meant is that this is a viewpoint which is very prevalent and has a longstanding tradition in many medical communities. It is the reason for a large amount of advocacy and activity on behalf of medical history.

Seen in the wider university setting, this is a form of medical history which fosters, albeit quite subtly and perhaps unwittingly at times, a certain exclusiveness among medical personnel. It lends itself to the promotion of professional *esprit de corps;* it brings students and faculty

together as members of a fraternity; it is an activity generally by and for medical people. It seems to me that Osler, for example, frequently approached medical history as a source of inspiration and that when he did so, he addressed himself primarily to medical students and medical colleagues. He wished to heighten their sense of belonging to a venerable and honorable profession.

No one can question the correctness of motives which are meant to instill devotion to the service of ailing humanity and the resolve to live up to the best traditions of the profession. But on the other hand, no one can expect nonprofessional people to feel any strong affinity for medical history directed to these or similar ends. This is part of the reason why medical history of this sort has no positive meaning in the broader university setting.

Conversely, the *raison d'être* of the society approach to medical history is not the academic pursuit of historical inquiry. In its view, for instance, a full-time medical historian makes about as much sense as a full-time cheer leader. And to introduce scholarship into fellowship is to misunderstand the whole situation, or what is worse, to threaten to embarrass the latter into silence. Yet, it is doubtful if there can be any other basis for the history of medicine in the university as a whole than as an academic subject. This fundamental difference in approach may account for the fact that many who misunderstand or lack a sympathy for its motives see the efforts of "society" medical history only as bad history and not as good fellowship.

I believe that what I have called the "society" approach to medical history deserves the thoughtful consideration of anyone concerned, in practice or in policy, with the history of medicine. It has been my experience that to a large number of medical people, both for and against the subject, it is this society concept alone which they know, and this is what they assume is meant when the term *medical history* is used. Even where this is not so, many medical people who advocate the pursuit of medical history were at one time or another exposed to the society concept, and despite obvious departures from it, manifest residual affinities and sympathies for it. They continue to feel the needs it tries to satisfy and hope to see incorporated into medical history, whatever its form, the wherewithal to continue answering these demands.

It has already been mentioned that one of the commonest motives given by those who take the society view of medical history is that it enriches the humanistic aspect of their work. What is frequently meant by this, it would appear, is that by an avocational interest in the history of medicine and a participation in the social celebration of it, the individual is given some unformulated antidote or supplement to the more strictly scientific fare which typifies modern medical curricula. Just

what the essence of this is is usually undefined, but consumption of it may leave a variety of aftertastes, suggestive of anything from better bedside manners to a wedding of the two cultures. There is usually nothing specific about society medical history which either precludes the possibility of success in these aims, or assures it. Most likely, the character of the people who participate will determine the outcome in any given case.

But when something more specific is meant by *humanistic,* and this is given first priority in the endeavors of those involved, the whole character of what is done may become more formal. Because of this, and because a desire for including humanistic studies in the medical setting is shared by many medical people who are not of the society view of the subject, I have chosen to treat this attitude separately and to call it the "liberal arts" view of medical history. This approach is usually reflected in more formal teaching, ranging from elective seminars to extensive required courses, and a more consistent commitment to the teaching of specifically historical topics. I would venture to guess that the liberal arts attitude to medical history still constitutes an important motive for whatever demands are being made by medical schools for the inclusion of medical history in their curricula and medical historians in their midst.

But in the larger view of the whole university, the liberal arts concept is still somewhat localized. Its preoccupation with what medical history can do for the medical student continues to make it physician-oriented in both content and application. Unlike society medical history, the liberal arts view is at least logically compatible with that larger prospect of the university setting, but, as with the society type, it may also remain indifferent to this possibility. If it is intended as a bridge between the humanities and the medical community, it is largely a one-way bridge.

There is an attitude, however, where the overriding concern is to make medical history a two-way bridge. This might be called the "interdisciplinary" view. This can be meant in two senses: within the medical school, as a means of joining together what specialization has put asunder; within the university, as a means of integrating medicine into the larger academic world. Obviously, it is the latter which concerns us here, though the ensuing remarks are not without their relevance for the variety within the medical school. In turning to this interdisciplinary view of medical history, I am leaving the contemplation of motives which are strictly indigenous to medicine for interests more generally shared elsewhere in the university.

Characteristically, and for good reasons, this is a view particularly prevalent among administrators concerned with academic policy on a

broad scale. This must inevitably lead to the advocacy of, and planning for, interdisciplinary medical history by persons only remotely acquainted with, perhaps not really interested in, medical history itself. This cannot be helped, but it is a situation not without its risks and is aggravated by the fact that there is little experience in the truly interdisciplinary use of medical history to act as a reliable guide.

With respect to present trends, notice should be taken of two very significant developments, principally since World War II, which have a bearing on the university setting of medical history. They are the growing ties between the medical and other sciences and the rapid development and popularity of the history of science.

The first of these is important in a number of ways. The growing connections among the medical and other sciences are obscuring the boundaries which previously separated the medical school from the rest of the university. Greater integration of physical and human resources is becoming necessary. A reassessment of traditional views and a reorientation of perspectives is in progress. Interdisciplinary studies are looked on with increasing favor. New types of administrative and institutional arrangements are becoming prevalent as, for example, in the recent proliferation of such posts as university vice-president in charge of the life sciences. More pertinent to the present subject is the growing number of combined bibliographic facilities in the form of biomedical or life-sciences libraries. But perhaps one of the most important, if less tangible, effects of this ever-increasing connection is that it emphasizes that view of medicine which sees it as a collection of sciences.

If to this prominent and obvious trend is added the greatly increased presence of the history of science on North American campuses, the logic of seeing the history of medicine as the history of the life sciences and of making it a part of the history of science is very compelling. Furthermore, to the ranks of those who see it this way are being added not only administrators looking for ways to integrate various parts of the university, but many of the growing number involved in the history of science who see medicine primarily in terms of its sciences.

I cannot imagine anyone who is seriously interested in the history of medicine not wanting to see the development of the closest cooperation between this discipline and the history of science. But this must be a planned and thoughtful liaison, not an unconscious drift of the one into the other. Indeed, if the history of medicine is to reflect the whole of medicine and help in its integration into the university in a well-rounded way, is it wise to aid and abet the present heavy accent on science in medicine by any exclusive or lopsided orientation of the history of medicine with the history of science? The history of medicine must respond to what medicine has been in all ages and not just to how it

looks to us now Any broad effort to study medicine's past will also bring the investigator into areas and viewpoints which are much more associated, for example, with the social than with the natural sciences. The relevance of sociology, anthropology, economics, etc., for medicine, past or present, has been pointed out many times.

In other words medicine itself is, in a way, interdisciplinary. It is continuous with both the natural and the social sciences. Any comprehensive study of its past implies a perspective that acknowledges its relations to all of these. Health and disease, how man has experienced them and what he has thought and done about them, are tremendously pervasive themes.

But if things have been happening to medicine, they have also been happening to historiography. It has been enormously influenced, for example, by the social sciences and has come increasingly to use their methods and perspectives. This has not reduced, it is to be hoped, its connections with a variety of humanistic studies, too, upon which it has traditionally depended for information about the past and for the methods and tools for uncovering and interpreting it.

The interdisciplinary character of the history of medicine, then, arises not just from combining two disciplines, history and medicine, but from the very pervasive nature of each in itself, and the variety of relevant connections that the history of medicine could make within the whole university is very large. But for all its ubiquity, medical history is not interdisciplinary just by virtue of some artificial aggregation of similar subjects which logically, but perhaps not historically, go together; medicine itself is a valid historical category of human thought and action. Institutionally, culturally, and intellectually, it can lay claim to these unique and central themes concerning health and disease.

Until now, I have been talking about what might be called ulterior motives and the history of medicine, by which I mean that the views of the subject so far described, the "society," the "liberal arts," and the "interdisciplinary," have for their intentions the serving of purposes which do not arise exclusively from the study of medical history alone. One could conceive of banishing medical history completely from the university and still finding means, perhaps sometimes even better means, for serving the ends which these views of medical history have primarily in mind. Indeed, it should be an important part of any plans for the development of the history of medicine in a university to consider whether or not it is the best means to achieve the goals in mind, or, conversely, whether what is finally designed to achieve them should be called medical history. Such discrimination is in the best interests of both the university and the discipline itself.

There still remains one view of medical history that requires brief

mention. It is that which sees the study of medicine's past more or less as an end in itself. Or perhaps it would be more correct to say that it has for its motives that same variety of arguments which characterize most disinterested historical inquiries. Like all other views of medical history which have been discussed above, this attitude is rarely found in isolation. Its advocates and practitioners may share any one or all of the above goals, but these do not have priority over the conviction that the subject deserves to be ranked with, and treated like, any other academic discipline, quite apart from its obvious or immediate applications. This I shall call the "academic" view of medical history.

Among those who might be regarded as academic historians of medicine, some are basically committed to another discipline and not to the history of medicine *per se*. Important as these people may be in any larger perspective of the history of medicine in the university setting, it is not to them that I refer here. Rather I mean those who are committed, full time, to medical history as a discipline. There are two or three things to be noted about them.

In the first place, they are likely to agree, in principle, that there should be a diffusion of medical history through the university. But this may arise no more from a conviction that medical history should be interdisciplinary than from a need they and their colleagues in these other fields experience for an exchange of information, techniques, or perspectives among themselves or their students. This voluntary liaison, built on individual needs, is perhaps the most desirable form that interdisciplinary studies can take, and the best planning for them will accent the opportunities for *ad hoc* arrangements over the fixing of such connections by more formal organization, since the latter may overlook the nature of the field as it is represented by the predilections of the individuals involved.

Another observation to be made is that full-time historians of medicine, committed to the discipline as such, are presently far fewer than the demand for them, and their ranks do not seem to be increasing very rapidly. This sets a very serious limit not just on the number of universities where there can be one such person, but, perhaps as importantly, on the number of such people any one university can acquire. In fact, it is doubtful if medical history has ever been represented anywhere on this continent, at any time, with anything near the potentialities which have been suggested in this and preceding papers at this conference. The full realization of medical history within the whole university setting cannot be achieved through the adding of more cross-appointments to its one medical historian, but only by adding more historians to its department of medical history. Until at least some universities not only are willing but, through the availability of personnel, are able to develop depart-

ments of the history of medicine with a variety of people, coming from, or interested in, several disciplines, medical history in the university setting can be meaningful only in a limited sense.

By way of concluding remarks, I must first point out that the artificiality with which I have categorized the various attitudes to medical history is as obvious to me as to everyone else. They have been employed purely as a means of facilitating expression. It is also admitted that much of what has been said is obviously, and of necessity, impressionistic, but that I deal in impressions, rather than in incontrovertible facts, I defend on the ground that my duty here is to begin a discussion, not to silence one. Nevertheless, it would perhaps be dishonest if I did not make known where I think medical history should be in the university setting.

In my opinion, a diversity of approaches and a variety of arrangements are necessary. If the subject of medical history cannot at present be represented in all its possibilities on a single campus, it will benefit greatly by being so on a number of campuses taken collectively. What would be disturbing would be either a drive toward uniformity through some narrow concept of what medical history is or what it is for, or a drift toward that uniformity through the thoughtless acceptance of habits and traditions. I am optimistic that if universities consider seriously what they want from medical history, what their obligations to the field are, and what results will come from what arrangements, the result will be the most ideal realization of what is practically possible.

COMMENTARY

Carleton B. Chapman

There is so much meat in Dr. Bates' presentation that it is difficult on such short notice really to cover it. It was profound; a very penetrating, but also a very subtle presentation. I read it through last night and wished then that I might have read it through a week or two ago, and then several more times since. It is also a very beautifully prepared document.

To turn first to Dr. Bates' characterization of some of the legacies of medical history, I think we might say it is a difficult legacy but not necessarily an evil one. In this sense I think he is a little hard on what he calls the "society" approach. But in some respects I would go a little further and perhaps be even more harsh. I would split it up into two categories. There is what I call the county medical society approach to medical history, which really attempts to glorify the past in order to

justify the present and to protect the present from what we might call legitimate criticism. It is a pompous, superficial, and oftentimes quite ignorant use of medical history. Then there are the Osler clubs, though not all are called that. They have tended in my experience to venerate the past and all too frequently to seize fragments from old authors and read into them false and impossible degrees of perception; for example, the statement that the germ theory of disease was well known to 15th century authors. One recalls T. S. Eliot's lines from *Murder in the Cathedral,* at the end of the first act, where Becket says, "I know that history at all times draws the strangest consequences from remotest cause."

I think this perhaps fits the approach of many medical history societies. But I would defend them a little bit mainly because almost anything one can do in the framework of medical schools to get medical students and medical faculty members together to talk about things other than their class work is almost invariably to the good. Admittedly, this does not necessarily, as Dr. Bates pointed out, have much to do with medical history. But I would defend it on that ground, nevertheless, and one might defend it on other grounds. For example, I wonder if one necessarily need concede that to introduce scholarship into fellowship is something which by definition is impossible. I doubt that it really is. In other words, I am saying that medical history societies offer a springboard rather than a millstone around the neck.

Incidentally, I think Dr. Bates is entirely correct when he says that these society meetings frequently start with discussions of other topics—medical ethics, for example, which again does not gainsay his point. I have wondered more and more in the years I have spent in medical schools where one should discuss these things, and the fact is that they are discussed practically not at all except in such societies.

Dr. Bates of course leaves us to infer for ourselves what we should do from here on, and I am a little impatient with him. I asked him last night what he was going to do at McGill, and he has not told me yet. That is his prerogative. But I wish that he could have gone ahead and told us more or less how we should straighten all this out. I think we begin to get the meat of it when we talk about the relationship of this field called medical history to other specialties within the broad field of history. Dr. Bates says that up to now the bridge is a one-way bridge. If that is true, how do you go about making it a two-way bridge? I think that this is really one of the two main questions before us.

I would like to raise another question growing out of something that he said: what does the term *medical history* mean? Should we not consider abandoning it, trying to find some better term to use? As Dr. Bates pointed out, it is an interdisciplinary affair. I would even go further and say that it must have an ultimate and intimate relationship with

other branches of history, as Dr. Rosenberg pointed out yesterday, with professional historians and their methods as such. The big question is how to develop these relations. At one point Dr. Bates pointed out that these relations should be encouraged but that they should be allowed to develop on a sort of *ad hoc* basis. If I may reread one of his lines, "This voluntary liaison built on individual needs is perhaps the most desirable form that interdisciplinary studies can take and the best planning for them will accent the opportunities for *ad hoc* arrangements over the fixing of such connections by more formal organization," and so on. The question I would raise is, why has this not happened before? It is obviously a logical development. What is wrong? Why have these relationships not come about already?

Since Dr. Bates does not tell us what we should do but leaves us to draw inferences, I will make a few suggestions, however profound or foolish they may be. I wonder if part of the solution to the problem of setting up these interrelations might not be to create a set of electives, and here I would underscore the word *electives,* at both undergraduate and graduate levels involving the history department as well as the historians of medicine and science, and also to open these electives to college as well as to medical students and to graduate students in other fields. It has seemed to me that anything one could do to bring medical students alongside students in other branches of the university would be all to the good. This is one way by which we may conceivably achieve our aim; and the bridge would then no longer necessarily be one way.

The other main question is something that has been troubling me all along these two days. It is related to Dr. Bates' term, the "liberal arts" view of medical history. It seems to me that many of us at one time or another have hoped that enforced exposure to medical history will somehow automatically humanize medical students and roll back or counter those trends which encourage the development of cynicism as students go through their four years of medical training. This question, by the way, is entirely apart from the activities of the pros in the field, for example, the excellent work done by Dr. Temkin and his predecessors. I am really concerned now with what I call, rather facetiously, the "whistling-in-the-dark" approach to medical history; it is the hope that something magically humanizing will naturally follow if we insert a lecture course that bears the title *Medical History* into the curriculum. The hope arises, I think, partly from the undoubted humanizing effect of exposure *in depth* to history as such, not necessarily to medical history or to any other restricted branch. Perhaps this attitude arises also because of vague notions that stem from the society approach, of which Dr. Bates spoke—the good fellowship feeling, the general view

that superficial knowledge of the past automatically confers some sort of claim to culture, as one of the essayists mentioned yesterday.

I do not think that this will be realized by superficial acquaintance with medicine's past. The question of how you go about broadening medical students and humanizing them—of making them more aware of certain of their responsibilities—cannot be approached in this rather artificial way. Exposure in depth, whether in medical school or at some other level, might have this effect on some students. But I do not think one can do it by the ordinary course in medical history required of all medical students. One just might succeed, however, if he could devise a system that would lead some, if not all, medical students to explore fully the extraordinary collection of influences—social, economic, scientific, and intellectual—that attend even the simplest of medical advances. Almost any one of Dr. Rosen's investigations into nineteenth century advances in environmental control (call it public health if you wish) would serve as a case in point.

John C. Greene

Let me begin by saying that I feel greatly honored and privileged to be asked to participate in these discussions in view of the fact that I do not know very much about medicine and not a great deal about the history of medicine except as it gets involved with the history of science. I think my only claim to a part in these proceedings arises from the fact that for the last three years, since I went to the University of Kansas, I have been faced in a practical way with the problem of integrating a program in the history of medicine into a program in the history and philosophy of science, or of attempting to bring about that integration.

When I went to the University of Kansas, not much was going on in the history of science, but there was a medical historian, Dr. L. R. C. Agnew, who was teaching courses on both the Medical School campus in Kansas City, and the general university campus at Lawrence, about 35 or 40 miles distant. I was told that Dr. Agnew, the medical historian, was an important member of the Committee on the History and Philosophy of Science and that he and I were expected to try to achieve maximum cooperation and maximum integration of the work in the history of medicine with the work that would develop in the history and philosophy of science. Now, three years later, I must report that we have achieved only very limited success in bringing this about, not because of any lack of enthusiasm or cooperation or congeniality on the part of Dr. Agnew or his successor, Dr. Robert Hudson—they have been extremely

willing and cooperative—but because of other factors, such as the physical distance between the two campuses and also because of what I might call the psychological distance.

However, I do not plan to regale you or bore you with an account of trials and tribulations, failures and successes, in this effort at the University of Kansas. Perhaps I can contribute more to the progress of these discussions by attempting to marshal the arguments pro and con with respect to a very important issue which we have been skirting but have not yet really come to grips with. I mean the issue whether medical history in its very nature is so intimately connected with the practice and teaching of medicine that the medical school in the general university complex has an overwhelming and primary, though perhaps not an exclusive, claim to the time and energies of the medical historian.

It seems to me that the arguments in favor of this traditional position have been presented, or at least suggested, very persuasively by Dr. Temkin and others. I would summarize them under three arguments. The first argument appeals to tradition. Medical history has developed in connection with the teaching and practice of medicine, hence one would expect things to continue in this way. The second argument is that medical history is of peculiar value and interest to teachers and students of medicine, so that they have a predominant and overriding claim to the time and energies of the professional medical historian. The third argument is that medical history, not in every individual case but on the average, is most successfully prosecuted and developed by people with medical training and medical background, and hence, in terms of recruitment of medical historians, of their proper training, of providing a proper atmosphere for research and teaching in the history of medicine, the medical school environment is essential.

One must recognize that these arguments have considerable force and weight, especially when presented by a person like Dr. Temkin with long experience in the field of medical history and great knowledge of all of the circumstances involved. However, I think it might be helpful to present arguments to the opposite effect, so that we may have them clearly in mind and weigh them against arguments of a more traditional sort. I would present the arguments on this side of the issue under two headings.

First, let us analyze the activities of the medical historian to see whether they are of necessity connected with the teaching and practice of medicine. On a very general level one could argue that the medical historian is, after all, a historian. He is not a physician or scientist; he is a historian. In these terms we would say he belongs with other humanistic scholars, say in a department of history or of the history of science and medicine, or at the very least in the college of arts and sciences.

Coming down to a closer analysis, we discover that one of the things he is doing is to study the development of the medical sciences. In this particular role he is a historian of science, indistinguishable from any other historian of science. Here again one might think that he would feel more at home in the college of arts and sciences and would have as much to say to students outside of the medical school as to those inside.

Secondly, the medical historian studies the history of a social institution or complex of social institutions. This has been emphasized by various speakers here. These institutions certainly have a great relevance and interest to people who are teaching or studying medicine, but they have a great interest and relevance to a great many other people, too. It seems hard to argue on a purely *a priori* basis that in this respect the activities of the medical historian are of peculiar importance to people in the medical school as compared to people in the university more generally.

Thirdly, the medical historian is interested in the history of public health. Obviously this has a close connection with the teaching and practice of medicine, but here again it has tremendous importance beyond the limits of the medical profession. Here the balance seems about even as to which groups have the greater claim upon the time and energies of the medical historian.

Lastly, the medical historian is concerned with the healing of sick individuals, with the history of the relationship of the doctor and patient, the development of medical and surgical techniques, and so on. Almost anyone would concede that these are of very special interest to medical people, who would have the major claim to the time and energies of the medical historian in research of this kind.

If we add up the balance sheet that I have attempted to construct, it seems hard to conclude that the medical school or medical people have an overriding or predominant claim to the talents of the medical historian. The most that one could argue is that he perhaps should have a joint appointment. Certainly the odds are not better than fifty-fifty on the side of the medical school. I am inclined to think that perhaps the balance tips a little bit the other way, in the direction of other parts of the university.

Secondly, we must inquire whether the medical school or some other part of the university provides the best atmosphere for the successful prosecution of the study of medical history. In other words, where can the medical historian find an atmosphere of moral support, intellectual stimulus, and psychological comfort. I do not attempt to lay down firm generalizations on this point. I simply do not know enough. I would be very much interested to have the opinions of the medical historians and M.D.'s here. All I can say is that from conversations with some

medical historians and from some of the things that have been said here I get the impression that the atmosphere in some medical schools is not very conducive to the successful prosecution of the study of medical history; that in many places the medical historian feels isolated intellectually, morally, psychologically; and that he might feel more at home in all of these respects if he were located in and had at least his primary affiliation with some other part of the university.

The circumstances which bring about this psychological, moral, and intellectual isolation, to the extent that it exists—and I do not attempt to generalize on that point—are suggested in the following statement by a highly placed administrator in a medical school, commenting on the general topic of our discussions: "I see only one major problem in developing a program in the history of medicine and integrating it with other activities in the university. This problem relates to the freedom which scholars, both students and faculty, must exercise concerning how they use their time and which interests they will develop. Medical education allows very little opportunity for contemplative pursuits. Students have their days packed tightly with required lectures, laboratory sections, et cetera. Furthermore, with few exceptions, they are all required to be studying the same thing at the same time. Once they get to medical school they are treated as if they were all alike. A vigorous program in the history of medicine cannot, I know, thrive in the midst of such a restrictive atmosphere. The limitations on faculty members, postdoctoral fellows, et cetera, are only a little less restrictive than those for medical students. I think that the faculty members have many more responsibilities and fuller days than those of any other school in the university. Faculty members in the history of medicine—the medical historian—must either get caught up in the frenzy of activities which do not necessarily relate to their special interests or I fear they must feel a little out of step with the rest of the institution. Colleagues may be a little abrupt with a man who spends long hours just thinking or reading for pleasure."

I do not know how widespread these attitudes are. I do know that in some cases the medical historians feel isolated in an environment that is not very conducive to the vigorous pursuit of studies in medical history.

What about the other side of the picture? Is there any other place in the university that would be more conducive to the study of medical history? The answer to this question is not entirely clear. We do not have much experience to guide us on this point. But we should not blithely assume that there is no other place that could provide this atmosphere. It may be that history departments fifteen years ago, or even more recently, would have been unlikely to provide a congenial atmosphere for the medical historian, but I think this is becoming less true as his-

tory departments become accustomed to having historians of science in their midst. Moreover, there are in some places departments of the history of science, or of the history and philosophy of science, where a medical historian might well feel at home. I think it is an open question whether there may not be some other place in the university complex that would provide a better location for the activities of the medical historian than the medical school.

This is the way the arguments pro and con appear to me. I do not feel that I have either the experience or the knowledge to decide which arguments are more conclusive. But it is important that we remain open to various possibilities, that we should not be blinded by the force of tradition, that we do not assume that because medical history has grown up in the context of medical schools it must forever retain this connection and location.

Finally, if we decide that it is extremely important for medical history to retain its traditional connection for reasons such as those suggested by Dr. Temkin, then it becomes tremendously important that the uncongenial atmosphere I have described, to the extent that it exists, be changed, and the sooner the better.

DISCUSSION

Medical School or College

Dr. Bates: Dr. Greene has provided us with a very clear exposition of some of the alternatives. I am sure he would not, any more than the rest of us, want an "either/or" proposition to arise again. We do not need to see whether the arguments for or against prevail. They can be used for having medical history in both places, and I for one would be very happy to see that happen. When it is argued that there is something unique about the history of medicine, this is not necessarily to say it therefore must be in the medical school, but rather, when the history of medicine is in the medical school, it becomes somewhat different. Then it is faced with tasks which are not quite the same as those of the historian in a department of history.

As to the best atmosphere, perhaps the medical historian should not be placed where the atmosphere is "best." Perhaps he is needed most where the atmosphere is bad. The quotation that Dr. Greene read us described medical schools of precisely the kind that we are trying to get rid of. If medical history is in conflict with the kind of medical school there characterized, perhaps this is precisely the reason why medical history should be in that school.

Dr. Temkin: Yesterday in my presentation I repeatedly referred to the department of the history of medicine, how it should be composed, and what its duties should be. And of course I talked, since that was my frame of reference, about

the duties primarily to the medical school. One thing I did not do was say where this department should be placed. I did that deliberately. I think that Dr. Greene has brought up some very important points. It is not enough to say that of course we should have medical history in both the university and the medical school, because we are faced with practical matters of appointments and so on.

I think Dr. Greene has been very fair in outlining the position for the medical school. I tried to listen carefully to the arguments he presented in favor of having medical history within, shall we say, the broader intellectual environment such as the other part of the university provides. I have not been able to convince myself that the two lists really are arguments pro and con. In my opinion they go wonderfully together. What Dr. Greene has pointed out in his list, with one or two very important exceptions, is that what is being done in medical history and by the medical historian is of equal if not sometimes even of greater interest to others. The one exception which I think Dr. Greene admitted was the history of healing techniques, healing practices, and so on. What we are confronted with is a list giving us a variety of reasons, traditional and present, why medical history is and should be located in a medical school, and an additional list pointing out how wide the interest is outside of the medical school. These do not necessarily determine that it has to be here or there.

Then comes another factor, namely, does the medical school provide the best atmosphere? We, I think, agreed without taking a vote that there will be medical historians who are comfortable in a medical school, and I think we at least allowed the possibility that there are medical historians who seem to be more comfortable, shall we say, in some place other than the medical school. First of all, apart from individualities—there are always misplaced doctors and misplaced historians—is there in this any essential possibility of truth? I would say yes, there is. As medical schools are now, the medical historian is in danger of being exposed to a certain amount of intellectual isolation. His subject in many medical schools is considered at best a fringe, at worst a frill, and this is not conducive to a serious scholar's peace of mind and activity. He is confronted with problems which to a large extent do not concern him. When the form for renewal of my training grant was submitted to me, a booklet was included which outlined the responsibilities of the training grant in relation to animal care, with which I obviously had nothing to do. I give this only as a symbolic example of how a medical historian may find himself in an environment which is not primarily his. Yet he may be able to discuss a number of medical historical questions with his medical colleagues. When it comes to the question about what good is the discovery of an Egyptian papyrus, some of his medical colleagues will be intrigued, others perhaps not. When he is in a university campus he can go to the department of Egyptology and he will be welcome. This is obvious.

We have to weigh these things and come to a decision. I think the decision need not be an exclusive one to the extent that if the department is located in the medical school, it then will have nothing to do with the university. Similarly, if it is situated on the university campus, you would agree that some people from that department should occasionally go over to the medical school.

Let us assume for a moment that the latter is the case; what will the consequences be? In the first place, medical history will no longer be fully represented

in the school. It will be presented by somebody who comes from outside the medical school with all the psychological consequences of this. But the other medical historical activities in the medical school, such as what Dr. Bates described as the society approach, will not be dropped; a legitimate interest in medical history will continue because it is there. The medical historian would, I think, be in an awkward position if he said, it is true, all this goes on, but because of my convenience and better environment I visit you twice a week and see to your needs, while for the rest I am in a better place where I am, on the outside.

The other question is, what will happen to the medical historian on the university campus. Nobody can predict. A number of medical historians, especially those who are chiefly interested in the basic sciences, would probably continue doing more or less what they did and they would perhaps be more comfortable. But I see a great danger. If the place of the medical historian is on the campus, then the intellectual problems of this environment will subtly influence him, and he will drift more and more away from the problems of the medical school. These problems may be uncomfortable for him, but they are there, and I think he has an obligation to them. And this obligation he will increasingly shirk if he is on the university campus. The problems will disappear from his horizon. Besides, he will not be in a comfortable position to deal with them. It is one thing to deal with ancient Egyptian papyri on the campus; it is quite another thing to deal with the technical history of medicine. He will be separated from one of the main problems that confront him.

I will concede that the other side has claims that have to be fulfilled and that they are not sufficiently fulfilled right now. I am happy that you said that the medical school may not at present represent the proper stimulating environment. If we decide that medical history should remain in the medical school, then it is high time that we change the intellectual environment of the medical school. Nevertheless, I think that our responsibilities—and this factor I think overrides convenience and congeniality—primarily lie with the medical school.

Dr. Berry: Much of this discussion is pertinent to how one recruits a faculty for medical education *in toto,* not just for medical history. Look at biochemistry, for example, which not only began but has until recently largely developed in medical schools. Recently it has spread into chemistry and physics—into all kinds of disciplines. A large university maintains a cluster of biochemists in the department of chemistry, a cluster in the medical school, a cluster in the teaching hospital. Those working in all these areas are making significant contributions, both to biochemistry and to medicine, but the emphasis of each group is a little different. One sees the continuous stimulus of medicine on biochemistry and, I submit, it is similar here.

There is a tremendous advantage in having such a group of people as you have described in the medical school because they can draw medicine back into the university. Medicine has stimulated the growth of the sciences, of the humanities, of social science, and of everything else. As the continuous growth of knowledge goes forward, it is important that part be strongly focused in the

medical school for it is in this way that the university fosters the greatest strength in the medical school.

Dr. Rosenberg: I may be the only person here who teaches medical history outside the medical school. My feeling has been that a great deal depends on your original training. I was trained as a historian, and I try my best with medicine. Possibly I would do better if I were part of the time in a medical school, not because I would feel comfortable—I would probably feel less comfortable—but because it would teach me a good deal. I think this works the other way as well. The man trained in medicine feels comfortable with other doctors—which may be all the more reason to take him across the street and make him spend some time among the other people, absorbing the kind of influences that one does informally over lunch and participating in seminars.

There is a strong analogy in the situation of church history in the divinity schools. Church history is clearly established. So far as I know there is no major seminary that does not approve of church history, pursued by men trained in divinity. In the law schools students are often taught aspects of the history of law. I agree with Dr. Temkin that there is a commitment to discipline, that the law, medicine, the ministry, are social enterprises that have peculiar values and peculiar needs. If a doctor goes into medical history, he cannot give up this commitment.

The danger is in becoming so caught up in this that he forgets his proper task as a medical historian. In other words, he can easily go about trying to help as much as he can. If he does this all the time, he ends up being an errand boy rather than a good medical historian and hence not ultimately doing his best for the medical school and the profession.

The problem that Dr. Greene has raised is not really limited to medical history. You find it with a variety of other disciplines, for example, among the social scientists—the economists, political scientists, sociologists, and demographers, whom we have brought into our context and who also face the problem of having one foot in their discipline and the other in a foreign camp. This problem is going to be more and more common with a variety of disciplines. Not only do we split them off, as Dr. Berry mentioned in biochemistry, but we bring more and more people together.

We have been talking about the medical historian almost as if he were a pawn. You take him and put him here or there, and something happens. He is not, really, if he is worth anything at all. He is primarily a person who wants to do something, who for some reason has an interest in medical history. He can do this without the university setting at all. But it is incumbent upon any person in an institutional setting to try to establish relationships instead of waiting for things to come.

Dr. Duffy: I also teach medical history in a nonmedical setting. At Tulane I have a joint appointment, half-time in the history department and half-time in the medical school.

When I moved to Tulane, I requested specifically that my main office should be in the medical school. I am at home and accepted in the history department,

I have all the contacts I need, I know how academic historians think. But I needed to find out how the medical people operate, to understand them. I would say immediately that I am not as comfortable there. I have had to make my own way. The people have been pleasant, but there are problems. Nevertheless, it has been an educational experience for me to serve first in a graduate school of public health and second in a medical school.

I might point out that I am faculty sponsor for the history of medicine club. I am also taking over direction of the senior theses in the history of medicine. Many of the students have been directed by men with no real qualifications in the history of medicine and the resulting theses have been little more than term papers. We have now agreed that a thesis in the history of medicine, to be acceptable, must be a research paper. I am actually a part of the medical school and serve on committees. I visit the history department twice, sometimes three times a week. This limited contact is not bad, because I am familiar with history departments. I am improving my education, however, by virtue of being in a medical school atmosphere. It has been a tremendous help to me. At the same time I think that I can make a contribution by introducing some of the concepts of history and historical methodology into the medical school. I think a joint appointment can work very well.

I would suggest that a medical historian with an M.D. ought to have his office in the history department, since he will always be at home in the medical school. He will then absorb the atmosphere of another part of the campus.

Dr. Chapman: I do not think it matters where this activity is located, so long as two things are true: one, that it is viable activity; and two, that it has visibility in the medical schools, among medical students and faculty. You have to build the bridges that we were talking about, but the main thing is to make medical history a living and academically respectable activity that people can see.

Dr. Holmes: Between the two problems Dr. Greene has raised, the questions of responsibility and atmosphere, the former is the more fundamental. I would like to emphasize the responsibility of medical historians to the nonmedical student for two reasons. Everyone has contact with medicine either actually or prospectively as a patient, and each patient is interested in his health. Secondly, medicine has become a problem for every citizen in that it is now a matter of national policy. Therefore, the kind of understanding that medical history imparts to medical students is perhaps more acutely necessary to people outside the medical profession in coming to terms with the medicine of our time.

Dr. Rosenberg: There is a reality principle here which should be introduced, that is, who is going to pay for this. The divinity schools will pay for the church historians, but very few departments of philosophy or history will. The problem is how to utilize the intellectual resources which our professional schools are willing to subsidize.

I would like to re-emphasize the importance to medicine of having the medical historian in the mid-1960's help create some sort of liaison between medicine and laymen, who seem to be getting more and more hostile, at least from

my contacts and impressions. What is a better way to try to explain the problems of medicine and their historical development than through a college course for educated people who theoretically are going to become the active, articulate, decision-making members of the community.

In history, there is a feeling that things should change. Everyone says the new history should be taught. And they have been saying it since 1910, but it still has not really arrived. Most historians still write the same old political, institutional history. In a period when professional life is increasingly influential in society generally, a program in the history of the professions, or in the history of a profession, would add immeasurably to the depth of the offerings of any department of history. I think historians will probably agree upon this, but they are in no position to do anything about it.

Dr. Wangensteen: I do not believe there can be any question concerning the utility of a department of medical history in a medical school. Apart from ferreting out buried and forgotten information or interpreting and expressing judgments upon past events, beyond all this and its function of serving as a catalytic influence in the unification of the sciences in medical schools, medical historians make an important contribution in providing a keen stimulus to scholarship and incentive to learning. In my opinion there is great need for medical historians in the midst of medical school faculties to perform a much needed, neglected, and useful function.

Dr. Greene: There are certain things that I want to make clear. The first is that I hope it will not be thought that when I spoke of the psychological, intellectual, and moral isolation of the medical historian I was describing a particular situation arising out of the peculiarities of individuals. The description was presented as a general comment on the problem before this conference. The second is that I do not myself think in "either/or" terms. All I am saying is that it seems conceivable that the medical historian could be located elsewhere than in the medical school. I think we shall see a variety of arrangements; only by experience will we be able to say whether the medical historian who is an M.D. but is not located in a medical school can exert the kind of influence in the medical school that it is hoped he would exert under the more traditional arrangements.

But I would quite agree that the main issue is not one of psychological comfort or of physical location, though this can become very important in certain situations. It is rather the nature of medical history and the ultimate commitments and responsibilities of the medical historian not only toward medical people but toward the whole university community and the public at large.

The danger of fragmentation

Dr. Bates: Should there be a discipline called medical history? Should we have a department of the history of medicine? When Dr. Greene remarked that the

development of the medical sciences is part of the history of science and that the development of the profession and the social institutions of medicine should be dealt with by the social historian, he offered us a fragmented history of medicine oriented around other points.

Professor Temkin has in a sense replied to this by pointing to the responsibilities of medical history and the medical historian to the medical school. In addition, I think that medicine is a valid historical category of human activity and for this reason a valid discipline to be distinguished as such. But when one thinks about the ramifications of the history of medicine into the university, I suppose that the concept of fragmentation into a variety of centers is possible and that some university officials might view a multi-personed department of the history of medicine as rather grandiose.

I cannot escape the feeling that whatever we here think about the history of medicine, there are trends within the universities which could dislodge the history of medicine from its place in the medical schools. If it becomes a commonplace to look at medicine as a science or as a social phenomenon, this might influence the recruitment of people into the field and their perspective towards it. The center of gravity could shift away from the discipline of medical history as such to something quite different.

Dr. Bodemer: I have noticed, or perhaps inferred, a note of concern regarding the interdisciplinary aspects of medical history. I believe, however, that its interdisciplinary nature does not mean that it lacks a distinctive character, nor does it mean that it must necessarily be fragmented.

The responsibility for fostering medical history will for some time reside in the medical schools. For medical history to survive and grow, the medical schools must make a commitment. Medical students, like most post-baccalaureate students, are exceptionally realistic. If they discover that a medical school wants responsibility for the history of medicine placed upon the department of history or philosophy, or, indeed, anywhere outside the medical school, then the impact of that medical history program upon the medical students and the medical faculty will be greatly minimized. At the same time, when the medical school commits itself to the program in medical history, the medical historian must assume the responsibility for establishing and maintaining effective liaison with all the university departments which have any relevance to this field. If he does this, and if the medical school supports him, I see no reason why medical history cannot survive and grow as an academic discipline, why it cannot be interdisciplinary without being fragmented.

Dr. Rosen: Frankly, I feel that a good deal of the discussion is irrelevant. To use an analogy, at Columbia the history of architecture is taught in the school of architecture and in the department of the history of art, and nobody cares. Both are teaching it, though they give different aspects of it. I would not care whether you had a course in the history of medicine for the college or for the graduate school. In fact, I think you should. But if you give a course in the history of medicine, you have to have a philosophy. One philosophy is to dissect it into a number of pieces, but that can lead only to disaster because you will not be teaching the history of medicine.

If you accept the fact that the history of medicine is a discipline, then no matter how widely you conceive it or what aspect you emphasize, you have to teach it as a unitary thing and fragmentation is no worry. If you are not willing to accept it, you can fragment it in many ways.

Dr. Temkin: I want to pose a question, especially to those who came from outside of medicine, in the light of the comments which I have heard.

I will take it for granted that we all agree that medical history is a discipline. I stated before that I think this discipline has a responsibility towards medicine which is overriding. It also quite obviously has a responsibility to general education, just as medicine does, although medicine shirks its responsibility when it relies on newspapers and magazines to educate people outside the medical school about disease prevention and so on. The remarks that have been made about the importance of the history of medicine for a wide public are of course pleasing to me to hear as a representative of this discipline, but I would like to have some indication of how far my disciplinary vanity is justified. What is the dimension of the importance and interest that is attributed to the history of medicine as a discipline—as a discipline—beyond the importance which it has for medicine? Supposing that somebody proposed that a department of history of medicine be organized in a faculty of philosophy, as an experiment. What arguments would you marshal in support of this plan, especially if the dean was against it?

Dr. Holmes: Perhaps the parallel case of the history of science can be helpful. The history of science has been accepted more often in history departments than anywhere else. The argument here is that the development of science has been one of the prime movers in the modern world, and historians feel that they need to understand it as part of the general picture of how the world has come to be as it is today. The same argument can just as well be made for medicine. Medicine is also a prime mover in the modern world, and therefore people who are concerned with the world should take this into account.

At the same time, many of the arguments that have been presented about the proper place of the history of medicine could be exactly paralleled by arguments about the proper place of history in science, its relation to scientists, its obligation to the profession of science, its need to be visible and to deal with the problems of scientists. Yet the history of science seems to have developed primarily in association with history departments. This experience argues that the history of medicine also could be successfully introduced in history departments. The history of science seems to have found increasing reception in history departments since 1957 when, because of Sputnik as a dramatic focal point, science seemed to become a general national concern. More recently, the same thing has been happening in the case of medicine. It is becoming increasingly of general concern and the pattern could well be repeated.

Dr. Temkin: I am not quite satisfied: many things are movers in the modern world. Do you think that the history of medicine is so important that you would like to see it fully established as a separate discipline, not just as a part of the history of science?

Dr. Blake: I would say that as a discipline, medical history is not of sufficient weight to be set up as a separate department in the college. The purpose of history in college is to teach the students what the historical development of our civilization has been. Medical history is a very significant part of that history. But I cannot see that you need a department of medical history in a college any more than you have to have a department of church history. My answer, flatly, is "no."

Dr. Greene: If I had to go to the dean or provost, I would find some difficulty in making out a case for a separate department of the history of medicine in the college of arts and sciences. However, I do not think I would have any difficulty in making out a case for a department of the history of science and medicine, nor do I think I would have difficulty in persuading my colleagues in the history department of the desirability of appointing a medical historian in the history department, perhaps even more than one eventually, assuming that there was not one somewhere else. This is a relative matter. In the form that Dr. Temkin posed the question, one would have a hard time making out a case.

Dr. Rosenberg: In terms of the history of medicine performing some general social function for the laity rather than the medical profession, the question is not really whether it is feasible to set up a department in any particular university, but whether the discipline can develop itself so as to produce writers and a body of information that will help the laity understand the problems medicine has to face. I agree with Dr. Blake; I cannot see a dean agreeing to establish a history of medicine department in the graduate school. The reasons are perfectly understandable. Yet the history of medicine might still have a function in helping to provide a rapprochement at this moment in time.

HOW TO SUPPORT AND PROMOTE THE HISTORY OF MEDICINE

James H. Cassedy

Although most of the points I shall bring up in this paper have been made by previous speakers, I think it is worth while to say them again in a somewhat different context.

I thought at first that I was expected to speak on "grantsmanship." Subsequently, I realized that American scholars should have enough sophistication by now to know how to fill out applications for money. Anyway, I am poorly prepared to discuss that subject, as I have no money to give to scholars or departments. Since the talk is not to be on the grant process, I conclude that I am cast in somewhat the role of a huckster brought in to provide a formula for the corporate success of our field. I shall carry out this role as best I can during the next few minutes.

Your analyst from Madison Avenue would, I presume, ask some questions before proffering solutions. He might want to know, for instance, what are the neuroses of historians of medicine. Or, what TV shows do you watch? Are you ecumenical? Do you talk with historians of science? Do you talk with popularizers of history? Do you show your love for the Great Society by subscribing on installment to more journals than you can possibly read? What about your haircuts? Have you looked at your corporate image lately?

I shall come back to this matter of image later; now I shall ask a few more serious questions. What is this field of the history of medicine? How much do we want to change it? Are we frankly prepared to accept the consequences and responsibilities of the changes in size and scope that promotion may be expected to cause in the field—changes of status, of privilege, of intimate camaraderie, of professionalism? There is at least some question as to whether massive promotion of this field is necessary, feasible, or wise. Here we only raise the question.

Historians, physicians, and scientists who are interested will continue to contribute to the history of medicine through original researches of

great variety. Deans will include it increasingly in the curricula of colleges, graduate schools, and medical schools when they are convinced there is a need and a demand. But there is reason for thinking that the environment of education, medical science, and society is changing so fast that changes and growth of the field of the history of medicine ought not to be left to the uncertainties of normal development. Selective measures of promotion may well accelerate the growth of the field and may permit us to shape it constructively. I proceed then on the assumption that we wish to promote the history of medicine to its fullest potential in society and in the university as a whole, as well as in the medical and other professional schools.

In this paper I shall focus upon the "promotion" segment of my assigned title, since we all know what the basic sources of support are. I shall consider this field as being essentially a part of history as a professional enterprise. I do this because I think there can be no more than a limited future for the history of medicine as a discipline if it addresses itself only to physicians, if it makes of itself something separate from the history of science, and if it tries to exist apart from the mainstream of historical activity. Finally, I shall use the term *history of medicine* in a broad sense, intending that it should be used, as it often has been used in the Public Health Service, to include the elements of the term *history of the life sciences*. I thus include the history of the practice, ideas, and organization of medicine, the biological sciences, the behavioral sciences, and other health-related fields and activities.

We in the United States really do not know much about "promoting" in this field. The significant steps to advance research and teaching systematically are quite recent, even though occasional courses in the subject were given in the nineteenth century. I shall touch on but a few, in order to show that promotion of the field has involved a variety of media, approaches, and personnel. Among these steps, we may note the establishment of the American Historical Association in the mid-1880's, the start of Welch and Osler's medical history club soon afterward, Garrison's history in 1913, and the beginning of *Annals of Medical History* in 1917. There were the arrival in the United States of George Sarton and *Isis* after World War I, the establishment of the Institute of the History of Medicine at Johns Hopkins under Welch in the late 1920's, and the establishment of the professional society, the American Association for the History of Medicine, at about the same time. Also during these years Cushing, Klebs, and Fulton, Welch, Trent, Clendenning, and many others were building up the great medical historical collections; and along with this inevitably developed an extensive business in rare medical books.

The promotion of the field today in the United States has become a

substantial enterprise and includes already most of the paraphernalia needed for growth. The stimulation is coming from a variety of bodies: the institutes or departments of the history of medicine or of science, the journals, the associations, national and local, the rare-book dealers, the medical libraries, institutions such as the American Philosophical Society and the New York Academy of Medicine, foundations like the Macy Foundation, and government—the National Science Foundation, the Smithsonian Institution, the Library of Congress, and the Public Health Service. Each in its own way contributes to the whole complex promotional process. I want to illustrate this complexity by brief reference to some of the Public Health Service activities.

Within the Public Health Service, historical study has sometimes been regarded for its utility, for the ways it can illuminate the processes of medical science and research, put them in perspective, and help show where these activities are headed. Systematic promotion of the history of medicine and science in this agency began with the National Advisory Mental Health Council, where it was stimulated by a few members, such as Dr. Horace Magoun of the University of California at Los Angeles. When an advisory committee on history was organized by the National Institute of Mental Health, personnel within the Institute, including Mr. Philip Sapir and Dr. Jeanne Brand, began assisting the field. That Institute not only made research grants and fellowships available but persuaded other components of the National Institutes of Health and of the Public Health Service of the value of extending similar support in their areas. More recently the National Library of Medicine has received authority for extramural programs to support and promote medical history. It seems inevitable that the Library's long-time influence on the history of medicine will be greatly magnified through these and other programs.

Of interest to our field, I believe, have been the promotional efforts of the Public Health Service's History of the Life Sciences Study Section. These efforts have involved several people in this room as well as many scholars in the field who are not in this room. The administrative setting of the study section within the large program of Public Health Service grants for research and training is, I think, well known. The study section system at the National Institutes of Health and in the Public Health Service broadly was established in order to obtain scholarly review of grant applications. This advice is provided by leading outside scholars in the various fields of research. Many of the study sections at NIH, in addition to routine review of applications, have been active for nearly twenty years in promoting their given scientific fields through a variety of methods.[1]

[1] Cassedy, J. H. Stimulation of health research. *Science* 145:897–902, 1964.

The History of the Life Sciences Study Section, which started as the History of Medicine Study Section, also has had the mandate to stimulate its field as well as to review grant applications. It has attempted to do this on a modest scale through certain limited activities:

1. It has attempted to identify needs in the whole area of the Study Section's responsibility.
2. It has maintained subcommittees for detailed study of priority needs.
3. It has initiated measures to promote the history of medicine within the medical profession.
4. It has initiated a survey of the teaching of the history of medicine in medical schools; it is hoped that Dr. Genevieve Miller will soon receive funds for this survey.*
5. It has organized and held a small conference to explore biomedical historical library resources.
6. It has conducted another small conference to explore the needs in the large subfield identified as the history of the behavioral sciences.

Future discussions may identify other areas requiring similar kinds of attention. I would say that high priority might well be given to stimulation of the history of the biological sciences.

A second phase of the Study Section's stimulation of the field of medical history arises out of its review of applications. Quite apart from its influence upon ultimate infusions of money into the field, an official advisory committee gives the field a certain status vis-à-vis other disciplines. More important, a system of peer evaluation of proposals by itself makes for the general improvement of scholarship. In this case it has moreover, helped to develop over a period of several years a corps of mature scholars who have acquired, by looking at the applications of their fellows, a broad and authoritative knowledge of what is going on in the field, where it is occurring, and who is doing it.

For the participants, Study Section experience has often been educational and has broadened their approach in the whole field. It has helped to take us all out of the horse-and-buggy age of research and scholarship, so to say, and introduced us as historians to the pace and flavor of the grant-oriented world of modern research. For better or for worse, Study Section work has turned historians, like scientists, into nonchalant users of long-distance telephones, into habitués of conferences in smoke-filled rooms, and into confirmed jet and U-Drive travelers going to out-of-the-way work rendezvous all over the country.

A partial analysis of Public Health Service grant applications in medical history over the past five years may suggest some things about the

*Since delivery of this paper, Dr. Miller's survey was launched.

state of the field and lead us finally to the assigned topic. Table 1* presents a summary of the applications considered by the Study Section from 1961 to 1966. I have broken them down in only two ways, although there are other fruitful ways to examine these data. The sources of applications, I believe, are of considerable interest. Out of 211 research-grant applications, we had 64 from physicians and medical students, 44 from biological scientists or specialists, 69 from historians or historians of science, 34 from humanists or social scientists. A breakdown of this last group of 34 attests to the great variety of persons who are actively working in the history of medicine. It includes people who are primarily educators, economists, sociologists, linguists, lawyers, speech and drama professors, English professors, folklorists, classicists, philosophers, and librarians. Another five-year span could well find other professions represented.

The areas of research in which these investigators have worked fall into eight rough divisions. Clinical medicine or medical specialties were the subjects of 21 applications; medical institutions, 55; biological sciences and chemistry, 23; public health broadly, 26; pharmacy and materia medica, 15; behavioral sciences, 63; diseases, 6; and other, 2.

There were also 69 individual fellowship applications. (These do not include students being trained under institutional grants at Johns Hopkins, Yale, or elsewhere.) Of these, 7 came from physicians and 5 from scientists, while most of the balance were from general historians and historians of science. As to their areas of concentration, the history of medicine strictly speaking was represented by only one. The others were as follows: history of biomedical institutions, 8; history of biological sciences, 25; history of pharmacy, 5; history of public health, 5; history of behavioral sciences, 22; history of diseases, 3. These were the areas of their thesis topics or, in the case of post-doctorals, of their actual research projects.

Most of the fellowship applicants were from a small handful of institutions. Harvard had by far the greatest number, while Johns Hopkins came next. Wisconsin and UCLA each had some. Harvey Young at Emory and John Duffy at Tulane sponsored a few, and there was a scattering of others. The East had many more applications than all of the other sections of the country put together.

These suggestive data from recent experience can lead us to the question of how to promote. I have already observed that many people are now concerned with the history of medicine. The sources and mechanisms of obtaining support are well known, but seemingly they do not provide enough for what we want to do. I believe that considerably more support and backing may well be available ultimately if persons in

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the field can fulfill a number of conditions, perhaps necessarily in the following order.

First, the field would be helped by finding a full-time administrator somewhere to give his whole attention to the matter of organization, pulling loose ends together, and nudging people where necessary. It ought to be someone in a position of influence such as J. Franklin Jameson or Boyd Shafer occupied in past years at the American Historical Association. The rest of us are all too engrossed in our own research and teaching to do enough of this.

Secondly, I think that the field, when it organizes itself, must actually set about the unscholarly but necessary business of changing its own image. I do not advocate changing our name like a brand of soap. I do say that the field must find a way to eradicate the pedantic, ingrown characteristics with which some people have associated it. It must also try to put across the idea that the history of medicine is something more than a luxury for a medical school, that it is not necessarily an esoteric subject of no relevance today. I have the impression further that this field has been excessively dominated by the viewpoint of the collector of medical books. This viewpoint had its place in the day of Welch, Cushing, and Fulton. It is an anachronism for a field that strives to be dynamic. I strongly believe that the field will go nowhere, least of all in medical schools, until it no longer leaves the impression with outsiders that it is only an antiquarian adjunct of the rare book dealer.

Thirdly, in addition to its traditional intellectual roles, the field might seek to fashion a *service* role: service to students, to educational systems, to medical sciences, to governments, and to national goals. This means accepting the premise that history can be of direct utility. It appears to be a necessity if the field ever hopes to compete for attention, personnel, curriculum space, and faculty chairs in the academic marketplace, particularly in medical schools.

There is a fourth preliminary condition that should get more than lip service. Like other scientific fields today, this field must somehow take on an experimental frame of thought, reference, and action. It must take a few plunges in the dark. It must try some new approaches, and fashion at least a few new and radical experimental programs, some of which may survive alongside the true and tried old ones. It will require no less to win over some of the scoffers, the skeptics, and the untouched.

I have implied that there is an organizing task to be done. No amount of organizing, however, can replace the initiative and activity of the scholars and workers who themselves form parts of the field. In the final analysis, it is up to the interested parties to do most of the promotion within the framework of the institutions which are relevant to the his-

tory of medicine. There is no doubt that most of our institutions can accomplish more than they have in the past.

Our professional medical history societies, for instance, can do more than they have in the past to improve standards. They can do more to develop rosters of scholars, of research and teaching personnel. They can represent the field in legislative hearings that may be related to the field. They must assist in protecting the integrity of scholars. They must also develop better methods of educating deans, foundations, and other potential sources of support in the values of medical history.

Existing graduate departments of the history of medicine can perhaps promote best by maintaining their standards of teaching and scholarship. They may also be in a position to make further curriculum experiments and to broaden the base of university interest by further development of cooperative arrangements with other departments, both in and out of the medical school.

Administrators of medical schools have an especially arduous task of promotion, if they are willing to accept it. (I also include here administrators of schools of public health, nursing, pharmacy, dentistry, and veterinary medicine.) Such administrators should first of all decide if they really want to include medical history in their curricula. Those who are not willing to ensure that the subject is taught as professionally as any other subject in the medical school would be doing everyone a favor by leaving it out entirely. Schools which do decide to present medical history should secure well qualified instructors and give them regular appointments instead of relying on spare-time lecturers. They should provide solid historical library collections for use, not show. Since there is a shortage of well trained teachers of medical history, medical schools might well develop institutional and regional personnel utilization experiments. They could also experiment further with modern communications media, utilizing these media imaginatively to present aspects of the history of medicine and science to their students.

I believe there are definite limits beyond which medical schools cannot reasonably be expected to support programs in the history of medicine. There are limits to the interest of students and faculty, limits of space and time in the curriculum, limits of resources and money. The short shrift which the subject now gets seems to indicate that we have about reached these limits. If this is true, should we not recognize these limits and, in most cases, stop projecting elaborate new historial programs for medical schools? Most medical schools probably need only good introductory courses. Graduate programs in medical history may well find more desirable arrangements and environments in the university setting, for instance, in history or history of science departments.

Not every history department, of course, would be hospitable to such

an arrangement at present. There is much to be done to promote interest in the history of medicine and science among general historians themselves. Nevertheless, even now the historical profession can do much more than it has in helping to bring the methodologies and techniques of history to the history of medicine and related subjects. It can also do much more in introducing the subject into general history texts and courses.

Another type of promoting institution is the foundation. I hope that foundations will be able to extend more financial aid to traditional graduate departments of the history of medicine and scholars in the field. I hope also that it may be possible for them to encourage and support one or more experimental graduate programs of training in the history of health-related sciences and activities. A number of other projects seem equally appropriate for foundations to undertake: the financing of selected curriculum experiments; promotion of experimental regional programs—i.e. regional utilization of available trained personnel, regional interuniversity graduate programs, and regional medicohistorical facilities, especially libraries; and stimulation of textbook development for various subdisciplines.

Like everyone else, the Federal Government could do more for this field than it has, particularly if it had more money. It could do much more to explore and promote diverse approaches to training in the history of all health-related disciplines. It can encourage utilitarian and social applications of the field, as well as the more abstract values. It can also do more to stimulate and support the preservation of documentary sources and historical archives.

Individual scholars can probably assist the development of medical history best by conscientious concern for the caliber of their own studies. But it would also be of great benefit if more scholars became lobbyists as well, and practiced lobbying more extensively than at present.

Lobbying and stimulation of the types mentioned above will, it is to be hoped, elevate the history of medicine as a scholarly pursuit, as well as broaden its attraction to students, teachers, and society in general. Accomplishment of these ends presumably will also finally bring about an end to American dependence in this field upon European scholars. For several generations medical history in our country has had to have infusions of scholars from Germany, England, France, Switzerland, Canada, and elsewhere to staff our leading medical history chairs. I do not know what this field would be today in the United States if we had not welcomed or reached out for scholars like Dr. Sigerist, Dr. Edelstein, Dr. Temkin, and Dr. Stevenson. But it does seem an anachronism that we cannot, in this wealthy nation, having already built up magnificent historical collections in our libraries, produce in our own univer-

sities a larger proportion of the scholars and teachers we need, both in the traditional molds of medical historians and in new molds.

To achieve such ends requires, perhaps, that we go back to Madison Avenue after all to find a hucksterish slogan and exhortation: Think big. Let us think as part of the larger scholarly community. Let us accept the history of science people as allies, not as strangers, and marry into the history department. Let us get the history of medicine into general history textbooks at all levels. Let us experiment with curricula, teaching, and research. We should not stop our inquiries at 1900, but should see that our field adequately illuminates the modern world of health services and sciences as well as the earlier worlds. Let us make its inquiries as wide swinging as Social Security. Let us make its training processes as far-reaching as the National Education Act.

COMMENTARY

Owen H. Wangensteen

I am obviously a ringer in this distinguished company. In fact, I am not quite certain just how I got in. I did not volunteer for the role, but my amateur status at Minnesota in trying to generate interest in medical history is known to some of you.

My position for many years has been that if all medical disciplines from anatomy to zoology were taught with a view to emphasizing those items that have survived the rust of time, we would graduate wiser and better informed medical students. There is too much emphasis in the curriculum upon the changing present, as all writers of textbooks know. Yet every student and most teachers feel impelled to concern themselves almost exclusively with the current scene.

Why this almost universal disregard of the past? How many professors in our medical schools are familiar with the historical background of their field? Alas, very few indeed, as those who audit lectures in your school can tell you. Medical students generally complain that teachers rarely relate the historical development of their discipline. Why? For lack of time? No, unfortunately, it is because the teachers do not know it and what is worse have little or no concern for it. Yet the struggles and roles of our predecessors should be of paramount importance to all. In addition to illuminating a subject and providing perspective, the historical approach supplies information on the roots of a discipline and its progress.

Why is there not greater interest in medical history amongst our students? The answers are simple: the curriculum is greatly overcrowded;

students know that a knowledge of medical history will not help them in their examinations as presently constituted. I have on occasion, following a seminar on the uses of medical history, called for a show of hands from students as to whether they favor a course of required lectures in medical history. Often no hand goes up. When then asked if they favor an elective course, still no hand may show. For many years my department has supported a surgical-historical club for undergraduate students who meet in the evening once a month at the homes of our surgical faculty over beer and snacks. Two of this group explained to me following a medical school seminar on medical history that they would be interested in auditing lectures, but did not want to take any more courses for credit. These were among our better students, and in a sense, their attitude reflects the current apathy of faculty and students toward required courses in medical history.

What a scramble it would create in medical faculties if the entire curriculum were voluntary, the student free to choose his courses with a view only to a certain balance and total number of required hours of instruction, upon completion of which he would take a comprehensive examination, for which each discipline submitted not more than three questions. I have the impression that with no captive audiences, teachers would vie for students. A fixed, inflexible curriculum is the plea of entrenched disciplines that see no place for a department of medical history.

There are actually two curricula in our medical schools today, one scheduled with administrative and faculty approval; another constituted by the many visiting lecturers, announcements of whose presentations crowd the bulletin boards of most medical school departments. Forty years ago the appearance of a distinguished lecturer on the campus was a medical school event. Today someone wanting broad exposure to a liberal education could spend his time wandering in and out of the halls of the university and the medical school, and, without payment of fees, learn from some of the best minds of our time.

Medical examinations reflect more the attitude of the craftsman or artisan than of the scholar, an echo of our complete absorption in the current scene. It is almost as though the present generation felt it had created all useful knowledge. We are busily engaged in sifting the sands of current ideas and techniques, believing fully that rescreening those of yesteryear is a fruitless occupation.

Our senior medical students are well aware that in some areas they know more than the professors who taught their own more recent teachers. But why this is so has not yet become an intimate part of the educative process. We merely take it for granted. Careful assessment of why it took so long to get where we now are would inevitably turn up some

exceedingly interesting materials, with revealing lessons. The medical scene is strewn with crusaders who failed to find sympathetic audiences in their day.

A certain warmth and understanding comes from pursuit of the background of a discipline. It makes us more tolerant and is probably the most effective antidote and preventive of arrogance. Moreover, such medicine is not difficult to take. A taste arouses the desire as well as the need for more, which, upon ingestion in generous doses, cultivates the grace of humility, which the Good Book tells us goes before honor. An appreciative and sympathetic link with the past improves our understanding of the present and illuminates the path to the future. We need to implement this important tool in the educative process in medicine.

I hold my primary responsibility as teacher to create an atmosphere friendly to learning. I equate other roles of that function in terms of side-line cheerleader and regimental water-carrier. In my view, no end of revision and retailoring of the curriculum will make better students. That objective can only be achieved by the students wanting to learn. We must eschew fact-cramming and spoon-feeding. Hemiplegic patients, with dependence upon others, almost invariably exhibit effects of nutritional deficiency.

A century ago, a new tool created a new medical discipline; witness the ophthalmoscope, the otoscope, and the cystoscope. Today, the interaction of two or more disciplines is hatching new ones: histochemistry, molecular biology, chemical microbiology, nucleonics, and many others. In the field of health, new divisions and subdivisions are being spawned.

The historian, it seems to me, of a more reflective turn of mind than representatives of most disciplines, should be studying these fusions of interests that sprout new disciplines. Amongst young aspirants in the various biologic disciplines are the giants of the future. Their number, growth, and maturation could be accelerated, I believe, by contact with the ideas and techniques of the historian. If interdisciplinary discussions were encouraged in our medical schools with open and active channels for communication between biologic disciplines, I have the feeling that discovery in one would come much more quickly to have meaning in others. The historian, who wishes to nurture this development, cannot be a recluse. The teacher who wishes to attract students must not resent invasion of privacy. He must be the professor of the open door, inviting student contact while encouraging discussions with representatives of other disciplines. I recall an interesting conversation of more than twenty years ago with Dean Milton Winternitz who stressed the significant difference in influence between the professor of the open and the closed door. We need to encourage graduate students in all the medical disciplines to cross the threshhold of the professor of medical history.

I am not suggesting that the medical historian become the handmaiden, but a full partner with biological scientists in exploring the unknown, which often has significant but unnoticed heralds in the past.

Such a department in full swing in a medical school could become an important and lively enterprise. Professors of medical history with training in biology, together with librarians, and representatives of many disciplines, working in intimate cooperation, could, I believe, create an activity that would animate and quicken the interest of students and faculty in the uses of medical history. This, I believe, is the summoning challenge to medical historians. A change of venue? Yes, requiring a redirected orientation but without disrupting the work medical historians have trained themselves to do. By interesting himself in the problems of other disciplines, the medical historian may find this to be his greatest contribution to the advancement of knowledge.

With the helpful interest of Dr. M.B. Visscher, Distinguished Professor of Physiology at the University of Minnesota, the Department of Surgery formulated somewhat more than thirty years ago a weekly interdepartmental surgical-physiological conference, which has continued these many years and has proved a useful forum for exploring and developing new ideas. A whole generation of surgeons, many of whom have stayed within the academic arena, has been nurtured in this environment. Similar interdigitation of surgical activities with other disciplines needs to be encouraged, including biochemistry, biophysics, immunology, and microbiology.

The medical historian could play a significant and vital role in such inquiries. One of my protégés, Dr. Richard DeWall, built the bubble oxygenator which played an important role in making intracardiac surgery a reality. Several years later, DeWall undertook to look into the history of oxygenators and, much to his surprise, found one not unlike his had been described decades earlier.[1] It takes many minds, of course, to ferret out such buried information, known to someone but rarely to the person who could implement that information usefully. Examples of this kind could be duplicated in everyone's experience, but this brief recital suffices to suggest that the historian can influence the current medical scene, materially and helpfully, by enlarging the scope of his activities. Not a mere peep, but a good hard look and critical examination of this suggested new outlet for the historian's endeavors, I feel, is in order.

When intracardiac surgery was born, I noted with some dismay how the interest of our surgical fellows in visceral surgery declined. They

[1]DeWall, R. A., Grage, T. B., McFee, A. S., and Chiechi, M. A. Theme and variations on blood oxygenators. II. Film oxygenators. *Surgery* 51:251–257, 1962.

began to queue up for training in intracardiac surgery. A new line is also forming in the area of tissue transplantation. I recognize full well that when new developments occur in visceral surgery, this attenuated line will again lengthen.

Students want to be where history is being made. They want to participate in the making of history rather than in its study. This fundamental and universal reaction needs our attention and serious concern. Can medical history break into this scene? I believe it can. The primary purpose of history is not to blow dust off old books, but to lend interpretive meaning to events, not alone of times long past but recent and current as well. Antiquarians are to be encouraged, but the best remedy for the present lack of interest in medical history is acceptance by historians of a greater interest in and sense of responsibility for the current scene.

The historian is an investigator. He is asking the same types of questions as the investigator in other biologic disciplines—the why and how of causes and consequences. The only difference is that the historian's concern is largely for the past. The biological scientist's interest is focused upon the future.

The potential of a discovery is often obscured by curtains that have to be lifted to impart meaning to the new-found knowledge. It is usually some intuitive, meandering, searching soul who uncovers the significance of a fact long buried in books on our library shelves. How many tomes wait decades or even more than a century for a reader to cut some of their pages? Yes, this happens in some of the most distinguished libraries of the world. Witness the lag between the discovery of sulfanilamide and its application by Domagk; of penicillin and recognition of its usefulness; of ether, of chloroform, and of antiseptics and their application in elective surgery. We need the classicist in medical history, the profound, erudite scholar, who works by himself. However, we are in greater need of the romanticist who stimulates and inspires others, working with young protégés, encouraging them to try their own wings.

If I were young again, a wish granted only in legend to a favored few Prince Charmings, I would think seriously of medical history. If fortunate to have a role as a medical historian in an academic atmosphere, I would think of a large department, encouraging the erudite antiquarian scholar, but lending more emphasis to the study of medical history by students of other disciplines.

When the historian expresses opinions upon recent events, he is in effect making a public demonstration of how he thinks, just as a surgeon expresses his judgments and technical skill in an operation. Under these conditions both live in a sort of goldfish bowl. The historian knows his

judgments are sounder when expressed concerning events upon which the ashes of time have settled.

Each era has its heroes who dream or conjure up from available information imaginative ideas which lay just below the surface awaiting a discoverer. As time marches on and progress occurs in one discipline, those working in the interphases of advancing disciplines are the first to see the opportunities and the advantages. We are often told that the imaginative scientist experiments, and reasons and reads afterward. When the light dawns and the spark of inspiration is ignited, it comes, as Pasteur said, to the prepared mind, the instructed person who knows the possibilities.

If there were no books, no learning, every individual would be a floundering explorer. It is the preservation of the past that permits us to specialize, to earn our livings in particularized ventures and accomplish what we want to do.

The historian, who, more than other scholars, knows of man's successes and failures and what contributed to them, should be a happy combination of idealist and realist. One of the best appreciated of all the Hippocratic aphorisms is that life is so short and the mastery of many arts so difficult, that for only a gifted few is it possible to excel in more than one. How can we teach the young to know this?

History is essentially an invitation to learning. Our primary function as teachers is to try to make the learning process interesting and stimulating. If we can achieve this, students will be inspirited to go it on their own and, in the process, become real scholars. A study of medical history, I believe, has a softening influence on manners and courtesy and generates a spirit of humility as well as an air of gentility and urbanity which we need to cultivate in our medical students. But most important of all, exposure to the history of medical disciplines constitutes perhaps the keenest stimulus to scholarship extending far beyond merely passing examinations.

It is my feeling that primary schooling in a biologic discipline may prove to be the best preparation for the medical historian whether he be anatomist, zoologist, or even a surgeon. Some of our very best medical historians are of this latter cut. I need only mention Malgaigne, Pétrequin, Gurlt, Sudhoff, and John Shaw Billings, all of whom were initially surgeons. He who has a first-hand acquaintance with a discipline is best qualified to write its history.

Can ideas come out of discussions? Why otherwise are we here? A chance remark, the reading of a paper not bearing directly upon a topic under discussion, but presenting a new viewpoint, can generate new ideas.

Over the past hundred years there has been a fluctuating interest in medical history. When Sudhoff, surgeon-gynecologist, and perhaps the greatest of all modern medical historians, took up the pursuit of medical history after the age of fifty, following more than twenty-five years of practice, he lamented that the discovery of bacteriology had retarded an interest in medical history.[2] There is a current resurgence of interest in medical history in many medical schools. The interest will be longer sustained, I am convinced, if departments of medical history in medical schools participate in and encourage a reciprocal interest with biologic disciplines in attacks upon specific problems.

The medical historian schooled also in a biologic discipline, while lending a strong forward thrust to his own work, should come to think of one of his most promising and useful functions as that of participating with colleagues from other disciplines in attacks directed at hastening the convergence of extending and merging peninsulas of information between biologic disciplines.

Persons of like interest are not long the best company for one another, if they are to advance that discipline. Medical historians and librarians, I believe, can serve a very useful catalytic activity in bringing isolated archipelagos of ideas into more meaningful arrangements, from which fusions, enlightenment, and understanding can come. The geographies of land and of ideas are not so dissimilar. By a process of slow growth, the present has evolved from a wilderness of ignorance and empiricism, through scientific inquiry and application. The nature and manner of that achievement cannot be ignored by students of medicine. Departments of medical history that include the current scene within the range of their functions will, I believe, make an indelible and enduring impact upon professional and professorial responsibilities of medical schools in functions relating to undergraduate and graduate students, the faculty, the medical community, and the advancement of medicine. Departments of medical history must cease to be looked upon as unnecessary luxuries. The medical historian can come to play a pivotal catalytic role in lending meaning to discovery.

George Sarton's counsel has pertinence for these deliberations. Said Sarton, "we shall be true humanists only to the extent of our success in combining the historical and the scientific spirit."[3]

[2]Sudhoff, K. Address delivered at the inauguration of the Department of the History of Medicine at the Johns Hopkins University, October 18, 19, 1929. *Bull. Johns Hopkins Hosp.* 46:103, 1930.

[3]Sarton, G. The faith of a humanist. *Isis* 3:3–6, 1921.

Genevieve Miller

What a great change has occurred during the past thirty years. In 1936 men like Henry Sigerist and George Sarton were struggling for support of their fields and discouraging young scholars from entering them full time because of the difficulties of making a living. And at that time Sigerist wrote in his open letter to Sarton: "It is always the same story that repeats itself endlessly. Science progresses, new men open up new horizons struggling against difficulties, fighting prejudices, starving at times but carried on by their enthusiasms—until the statesman enters the scene clearing the ways for future research. It is not our job to beg for funds; we are poor administrators. Our place is in the study, the library, the laboratory, not in the anterooms of government offices or foundations. It is the statesman's duty to create the conditions for research. He has the power and, if he is an enlightened statesman, he must have the vision. If a country claims to be civilized, it must have a definite educational policy, a 'Kulturpolitik,' as the Germans call it. This is one of the primary functions of government for it prepares the future of the nation."[1]

Although medical history is at last officially sanctioned and supported by the Federal government as we all know, it is still a stepchild in our educational system. Dr. Cassedy would have us develop a dynamic service role for medical history so it can compete in the academic market place. This implies a complete confidence in the value of history and what it does for people.

As Jacques Barzun has said, "It is not what you can do with history, but what history does to you, that is its use." Of course, this involves the education of medical school administrators and curriculum planners. Medical history should be taken for granted as a natural and inevitable part of the curriculum, as a necessary part of the education of every worker in the health sciences, whether he is a physician, a research scientist, a hospital administrator, nurse, or social worker. In all of these fields an increasing need is being felt today for history, and this seems to be happening spontaneously. I have myself been called upon to participate in lectures in the history of the health sciences involving nurses and dentists and also librarians. I would like to speak a little further to the latter point.

It is obviously the librarians who are the custodians of the old medical books and artifacts, and it is important that they have both an interest and understanding of the subject beyond a purely antiquarian interest in rare books, as has frequently been the case. They, the librarians, will

[1]Sigerist, H. E. The history of medicine *and* the history of science. *Bull. Inst. Hist. Med.* 4:9, 1936.

be the ones who will be answering the medical historical reference questions, and it is important that they have the training to find and to evaluate critically this literature in which they search for the facts which they are giving their clients.

Librarians will, in many cases, be the principal promoters of the use of historical and archival collections and in the case of schools with medical history departments and historically oriented members of the faculty, they must necessarily work together. The interest and cooperation of librarians will certainly facilitate the historian's task immensely.

There is another area that we have not even touched upon yet which I would like to discuss briefly as another way of promoting interest in medical history. Dr. Cassedy urged that we support the preservation of documents and archives as necessary source materials of history. I would like also to mention here the importance of collecting the material objects of the health sciences—in other words, the establishment of collections of objects pertaining to the history of medicine, specifically the medical history museum.

I am not advocating that every medical school in the country should have a medical history museum, but I think that in the stimulation and promotion of general interest in the subject museums can be very important, because, in addition to their entertainment value, museums which undertake systematically to collect medical artifacts and the tools of the health sciences can serve a number of purposes.

We all know how pictorial materials help to stimulate a deeper interest in historical lectures, and we all try to use slides whenever we can. An even greater stimulus is the ability to handle actual objects which are being discussed in lectures. It is clear that if, when you are discussing Leeuwenhoek and the beginnings of microbiology, you can pass around a replica of a Leeuwenhoek microscope for the students to see just what he saw and how far he could go with such an instrument, the subject is made much more vivid and interesting. Or in speaking of temple medicine, if you can bring in votive offerings, the limestone replicas of parts of the body which were presented to the health temples in antiquity, this again is of interest. Even a collection of sputum cups or bed pans will show the changes which have occurred in the care of the patient with a greater impact than words alone can. We all know the value of bringing in books to illustrate our topics and this is just another facet of this same method.

Also, a museum provides the material for the study of the history of medical technology. In discussing the history of electrocardiography, it is of enormous value to show an early model of the electrocardiograph, or to produce a Lister carbolic acid spray in discussing antiseptic prin-

ciples in surgery. This can be done both by bringing students to the museum and by taking the objects to them in their classes.

In Cleveland the nursing schools seem to be much more aware of the possibilities of the museum in education than the medical school is. The nursing educators each year from two different nursing schools bring in their classes as regular teaching sessions to see the objects in the Dittrick Museum.

A collection of objects also helps to generate interest by its very existence. An example of this occurred only last week. An orthopedic surgeon who is a resident in a Cleveland hospital had visited the museum two years ago and had lamented at that time that we had very little material on orthopedic surgery on display. Last week he presented a paper to his hospital staff meeting about some Civil War splints which we were able to produce for him. On his earlier visit, we still had a lot of the museum material in storage, and I told him that if he returned when we were finally reorganized and the material accessible, we would welcome his use of it. So he came back and studied all our splints dating from the middle to the end of the nineteenth century. He looked up the pertinent literature and wrote a very interesting little paper which he presented at his staff meeting.[2] This, of course, was not a great or significant contribution to the history of surgery, but it was a positive stimulation for him. Although this man does not have a great knowledge of the history of medicine and surgery, he is, I think, on the way toward an even greater interest and participation, and possibly he will even be on the curriculum committee of a medical school sometime in the future and urge further instruction in the subject for students.

I would like to mention very briefly another way in which a museum can promote interest in history and in the history of the life sciences, and that is in interesting children. For the past two summers one of my assistants, who is, incidentally, a graduate student in the history of science and technology program at Case, has offered a seven-week, two-hour-a-week course to high school students in the history of biology from Aristotle to Darwin. The first year, when it was very poorly advertised, she had five students who came and who were very much interested. This year she already has sixteen signed up and there will probably be more because the course does not start for another week. Here you find interest in history being awakened at an age when the attraction may stick and lead to further development. As a matter of fact I have found in my own experience in teaching medical students at Western Reserve that usually the students who come to my lectures are the ones who were

[2] Published in the April, 1967, issue of the *Bulletin of the Cleveland Medical Library.*

already interested in history before they came to medical school, so if you can awaken this interest earlier, it is very good.

From the very sophisticated point of view of the professional academic historian it is obvious that much of the "historical interest" which the museum engenders is neither serious nor profound, but it certainly does provide a way for promoting history on all levels. The serious scholar interested, for example, in the development of microscopy necessarily requires the physical objects to be able to carry out his work. Like medical history itself, the historical museum exists not only for its own sake, in order to preserve medical artifacts, but also because of the use which can be made of it.

DISCUSSION

Dr. Veith: Dr. Cassedy raised the question as to how to make the history of medicine "respectable" to physicians. I think it became respectable to physicians with the founding of the NIH study section in in medical history. It was very odd. When the study section first came into being, the physicians said with amazement, is there really something like that, a study section for the history of medicine? They said it with a tone of voice that implied, what is the world coming to?

Of further importance is that the medical historian can say to his colleagues on the other medical faculties, when he is asked what department he is in, that he is in the department of medical history. There again is the question, is there such a department?

Also, it struck me that the medical historian has to be made respectable to the physician again, in view of the fact that until a very few years ago the Association of American Physicians, which is the elite society of American physicians, met together with medical historians in Atlantic City and most of the members of the Physicians were *ipso facto* interested in medical history, or at least considered it quite the thing to be interested in.

Promotion and funding

Dr. Stevenson: I am never able to remember certainly whether Dr. Berry raised $50,000,000 for 100 chairs or $100,000,000 for 50 chairs, but in any case it is clear to me he has considerable talents for promotion. I wonder if he would like to comment therefore in this regard.

Dr. Berry: One can raise money successfully for the things that people want to do. Raising money for things that you hope to do, is not often as successful. People give when they see a need and wish to help fill it. Once this need begins to be felt, the funds will be found.

The reason I think we need to have little apprehension about the growth of the history of medicine is society's growing appreciation of medicine's potential role. Parochialism is disappearing. Medicine is becoming a broader agency in terms of human welfare. This is now apparent in many directions; it started before the last war. Growth of the history of medicine will be a natural consequence. As the pressure grows, I believe people will emerge to take advantage of the programs that exist, the funds that are available, the experts who can help them learn. Any social institution is the reflection of social demand. The demand is now here, and this is the reason that the history of medicine will grow.

Recruitment

Dr. Bowers: It seems to me the central problem still is recruitment. What is the trend for those of you who run training programs? Do you find more good applicants coming around seeking scholarly careers in the history of medicine?

Dr. Temkin: To answer such questions you need a long period of time. So far the time is much too short; our particular program is only six years old. I have had years when I had more applicants than I had money and I had to refuse some, and I have had years when I had more money than applicants. I do not think that this represents a trend up or down. It simply represents a fluctuation for which a number of factors could easily be adduced. There simply is not enough to establish laws or even a trend. We have to wait and see how it goes.

Dr. Rosenberg: It seems to me from looking at Dr. Cassedy's chart that if one leaves aside the two training institutions, whose trainees are predominantly, though not exclusively, medical, the pattern is pretty clear. The great majority of applicants are from the graduate schools, from history and the history of science, and the reason is obvious. It is their business to write a thesis. Their professors tell them there is money in Washington, that if they apply for it, they can write their thesis. This is because the nature of their task is structured so that this is their job.

The question in terms of medical history is, how do you make an M.D. feel that it is part of his job to do this seriously and full time. I am not sure what the answer is, really, but it seems to me that creating the opportunity will introduce at least a few good people who might not otherwise have been introduced to the history of medicine.

Dr. Bodemer: I am not sure that many people know there is a career opportunity in the history of medicine. It was not too long ago, as indicated earlier, that a student entertaining the idea of entering the history of science was advised by the realists that he was electing a rather slow and painful death by starvation, that it would be better to seek gainful employment. I am not certain that most people do not now view the history of medicine, as a career, in that same light. Most have little opportunity to see evidence of professional medical historians. There are not enough chairs or faculty positions in the history of medicine in

medical schools and elsewhere to create the impression that there is academic opportunity in the field. Recruitment is directly affected by the general awareness of the field and its promise of a career. In the absence of such awareness, medical history will be viewed more or less as a temporary side step allowing one a chance to acquire a little historical *savoir faire* while on the route to another career.

Dr. Rosen: The Macy Foundation has a leaflet going out about fellowships. Are there enough places to send the fellows, if you accept enough of them, or will the acceptance rate be related to the number of places to which they can be sent?

Dr. Bowers: We are deeply concerned about it. We hope that we may encourage some other schools to take off by giving the two development grants that I mentioned the other evening. We are deeply apprehensive as to whether or not there will be adequate training opportunities, assuming we get an adequate supply of applicants. I think it is important for other schools to develop rapidly.

Dr. Duffy: I would like to say something about Dr. Cassedy's appeal for developing the field. I know it is sacrilege in America to question the idea that we ought to organize and expand. But I am not so apprehensive about the future of the history of medicine. One of the reasons that it has not flourished is that the climate of opinion in medical schools and elsewhere has not been favorable. But in the last ten years attitudes of medical school administrators have definitely changed. Medical schools are now hiring sociologists and anthropologists; they are becoming increasingly aware of the implications of social medicine.

I have no solution to the immediate problem of getting medical students into this area, but to me one of the encouraging things is the developing interest in the history of medicine among historians in other fields. People like Dr. Rosenberg and myself illustrate the point, and there are a number of others: men such as Thomas Bonner at the University of Cincinnati, Philip Jordan in Minnesota, Dr. Cassedy himself. These historians will encourage their students to enter the field, and this in a sense will stimulate an interest in medical schools. I think more medical students will become aware of the opportunities in history and will tend to push into this new field. I think the prospects are very bright. Probably the climate of opinion at this time is better than it has ever been.

Dr. Holmes: It seems to me we are certainly going in the right direction by easing the pathway for the person who is interested. It seems to me that this is more of a bottleneck, if there is one, than any supposed shortage of training centers. I do not quite agree with Dr. Bates' comment of yesterday that the length of time it takes beyond medical school is probably no obstacle to the people who really want to go into the history of medicine. It seems to me that many people who might be interested have a healthy desire not to postpone completion of their training until their early thirties and that there might be an important psychological barrier which is different from the one a person accepts who goes into medical practice. The life of the scholar is not quite so active, and I should

think it might seem more of a psychological problem to undergo such a prolonged training leading to a life which really is not so different from what the training was itself. The effort to facilitate this long trail may at least be getting at the worst bottleneck.

Dr. Rosenberg: The problem is that in attempting to recruit M.D.'s, you are competing with the M.D. Once a person has gone through the four years of medical school, he will very rarely turn his back on the advantages of medicine. I am sure if I had gone through medical school, I would not have gone into medical history even though I had very strong interests in it. I think it takes a great deal of motivation of a very rare kind. Perhaps the future—though I am somewhat skeptical of this—might lie in a partial exposure to medicine with the option of then taking a post-sophomore year off, in other words, trying it out for a year and seeing how it works before investing four full years of emotional commitment to medicine.

Besides, the process of learning as a medical student is a very intense thing. By the time you are through it, you are a doctor. I think that for each of the few people who become aware of the social needs of medicine, during their medical school and internship years, many more are perhaps blinded to it by the very intensity of their own experience, the common experience they share with other medical students. And I do not know how one is to overcome this.

Dr. Veith: In answer to Dr. Rosenberg's fear that people already in medicine are so dedicated they might not wish to change fields, I think if they were to become aware how much more manifold and varied the history of medicine is, they might be more inclined to give up medicine, because history of medicine lacks all the routine and monotony of the practice of medicine itself.

Dr. Stevenson: I wonder what are the elements in this motivation. A young man who studied the history of science in Harvard College and subsequently studied medicine at McGill announced while he was a first-year medical student that he intended to become a medical historian. He completed his medical degree, he has undergone an internship, and he is now in the first year of a Ph.D. program at Yale. Obviously the motivation was an intellectual stimulus that came from Harvard College. Possibly the fact that such courses are now more widespread in the country will provide the stimulus which will carry through to this further stage.

Dr. Temkin: I would like to make two comments. As far as time is concerned, there are possibilities. In all probability, we could turn out a reasonably well trained M.D. and medical historian within six years of graduation from college. This is I think not more than it takes somebody in the history of science to complete his Ph.D. How can this be done? We have an accelerated program in which especially good medical students may complete the prescribed medical curriculum within three years, so the fourth year, which is required, can be dedicated to an equivalent of either an internship or a fellowship in a department. Even assuming this fourth year is filled by a straight internship, which I would not like to see lost, that man, within four years, would have his degree

plus internship. While he is studying medicine, he can take all our courses. He is very much encouraged to do so. That will get him quite a long way. I think I could plan, with two additional years, to transform him into a reasonably competent medical historian, somebody who would be qualified to teach history of medicine on a professional level. What we potentially could do probably could be done at other medical schools too without really sacrificing anything, without turning the person into a half-baked medical man who really is not qualified, which is always a dangerous thing.

The second comment which I would like to make refers to something Dr. Duffy said about recruitment. I wish that more recruitment were done among the historians and philosophers and sociologists and so on. That is where I got my real surprise. We take, as fellows, not only medical men; we also take Ph.D.'s who will stay with us for any length of time we agree upon, depending upon their goals. My fear, when we started, was that the limited possibilities would very soon be exhausted by historians and philosophers and so on, and that I would have to turn them down in order to retain enough space for M.D.'s. Nothing of the sort happened. The people whom I would like to get, but do not get, are Ph.D.'s. Perhaps something can be done there, too, and not just in the medical community.

Concluding remarks

Dr. Bowers: The only thing I have not enjoyed about this conference is that it has been so agreeable. At times it has almost been a mutual admiration society. Speaking as an outsider who likes this field, I think we might have profited at times by a bit more disagreement.

Dr. Blake: On the contrary, I think there has been a considerable amount of disagreement, even if it was politely expressed, and a considerable variance in viewpoint.

Dr. Holmes: Underlying everything, it seems to me is quite a bit of disagreement in judgment. On the one wing is the view that the history of medicine is in a sickly condition, and on the other is the view that things are all right. Much of our discussion of what to do, or whether to do something at all, depends on one's judgment about this. The pessimistic view is that the field is not flourishing, that the message is not getting across. Another view is that the activity is small but the tenor of the times is in favor of it, so that if one goes ahead, maintaining high quality standards, by the fruits it will succeed.

Dr. Duffy: It strikes me that there is still a recurrent theme, a fundamental clash as to whether medical historians should have an M.D. or not.

Dr. Blake: On behalf of the Library, I want to thank you all for coming and for contributing to the discussions.

Dr. Bowers: I would also like to express my appreciation to all of you for coming here, and to express what I am sure is in the minds of all of us, Lloyd, and that is to thank you very, very much for being such an excellent Chairman.

Dr. Stevenson: I would like to say on behalf of the participants in this conference how much we have enjoyed it and to express our gratitude to the National Library of Medicine and to the Josiah Macy, Jr. Foundation.

Thank you very much.

Applications Received by History of the Life Sciences Study Section, July 1961–June 1966

Research Grant Applications (Total Reviewed—211)

A. Sources of Applications	
Physicians or Medical Students	64
Biological Scientists or Specialists	44
Historians or Historians of Science	69
Humanists or Social Scientists	34
B. General Areas of Historical Research	
Clinical Medicine or Specialties	21
Medical Institutions	55
Biological Sciences, Chemistry	23
Pharmacy, Materia Medica	15
Public Health	26
Behavioral Sciences	63
Diseases	6
Other	2

Fellowship Applications (Total Reviewed—69)

A. Applicants	
Historians and Historians of Science	55
Scientists	5
Physicians and Medical Students	7
Others	2
B. Areas of Concentration	
History of Medicine	1
History of Biomedical Institutions	8
History of Biological Sciences, Chemistry	25
History of Pharmacy, etc.	5
History of Public Health	5
History of Behavioral Sciences	22
History of Diseases	3

Table 1

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